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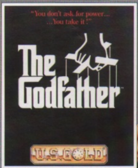

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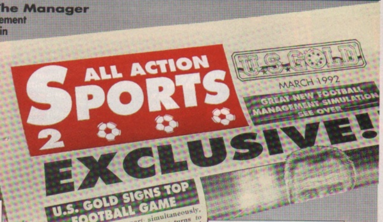

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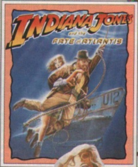

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Pow! Amy The Squirrel appears on out cover courtesy of Eric Schwartz, and Amy is copyrighted to Eric Schwartz and is used with permission.

OFF THE CUFF
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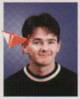
Dan Slingsby – Editor

This issue must be our best yet. Not only have we got a jam-packed issue, full of reviews for both the serious gamer and the serious user, but we've also bought up the rights to *OctaMed Professional v3*. Why the self-congratulatory back-slapping? Well, in case you've been living in the Amazon Jungle for the past two years, *OctaMed* is widely acclaimed as the best music package for the Amiga, and this latest incarnation is simply superb. The program has been extensively rewritten and incorporates a host of new features. If you're seriously into music or have always wanted to create your own tunes on the Amiga, then this is the program for you.

We also think we've struck a blow for cheaper software, by putting such a brilliant (previously unreleased!) package on one of our two coverdisks. We've lined up many more such offerings over the coming months which should save the serious Amiga user a sizeable fortune. And don't think we're forgetting the committed gamer, either, as this issue boasts playable demos of two of the hottest games this year: Electronic Arts' *Risky Woods* and Gremlin's *Zool*. Both demos are absolutely massive and we're sure they'll whet your appetite for more. We've got a lot more hot demos lined up in the coming months, so be sure to watch out for them.

By now I'm sure most of you will have heard about the demise of the A500Plus. Commodore have finally stopped production of the machine, less than eight months after its launch, to concentrate their marketing efforts on the new A600 (reviewed last issue). It's a surprising move, really, especially with the A570 waiting in the wings. In case you're not aware, the A570 CD Rom drive is only compatible with the A500, so Commodore have effectively killed off the only machine which can work with the new CD add-on. An A600 compatible drive is in development, but won't be with us before Christmas at the earliest. Work that one out if you can!

SPECIALS

28 MAKE YOUR OWN DEMOS

We've all seen them: wavy patterns dancing across a screen, or cleverly ray-traced images zooming to and fro. Or maybe the latest Eric Schwartz epic starring Amy the Squirrel. Yes, demos are an integral part of the Amiga PD and software scene. They offer a showcase of up and coming Amiga talent, and amidst the many Terminator II and Star Trek 'tributes' and snatches of sampled music, there are people who are forever pushing back the limits as to what the Amiga can do. In fact, wasn't it the infamous 'Juggler' demo which was used to sell so many Amigas in those oh-so-distant early days? It just goes to show thge power of such coding. But just how easy is it to put together such a demo?

CU Amiga goes behind the scenes of the Demo World to bring you the lowdown on this exciting area. We've tried to cover all aspects of the demo-writing scene, and will show you the basics of compiling your first creation. We explore the avenues of vector creation, music production and other demo-related topics, and even squeeze in a chat with top demo writer, Steve Packer – whose 'Chuck' series of animations are a legend in their own lunchtime. Extensive programming guides and a complete checklist of currently-available PD accessories are also listed in our incredible article, giving you everything you'll ever need to know. So if you want to find out more about this strange new world, turn to page 28 and prepare to learn...

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EDITOR Dan Slingsby **DEPUTY EDITOR** Steve Merrett **ART EDITOR** Andrew Beswick **TECHNICAL EDITOR** Nick Veitch **STAFF WRITER** Steve Keen **DESIGNER** Fiona Bourne **DISK COMPILER** Kenny Grant **ADVERTISING MANAGER** Tom Glenister **SENIOR SALES EXECUTIVE** Michelle Gardiner **SALES EXECUTIVE** Karen Neill **CLASSIFIED/PRODUCTION MANAGER** Remzi Salih **IN-HOUSE SCANNING** Becky Willis **PRODUCTION ASSISTANT** Esther Rodd **MANAGING EDITOR** Steve James **PUBLISHER** Garry Williams **EDITORIAL & ADVERTISING** 071-972 6700

CU AMIGA Offices –Priory Court, 30-32 Farringdon Lane, London. EC1R 3AU. Tel: 071 972 6700 FAX: 071 972 6701
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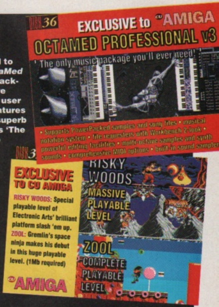
COVERDISKS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CU AMIGA
RISKY WOODS
MASSIVE PLAYABLE LEVEL
ZOOL
COMPLETE PLAYABLE LEVEL

In a massive scoop, CU Amiga is proud to present the previously-unreleased *OctaMed Pro* on Coverdisk 36. As far as music packages go, this is probably the best you're likely to see. Not only does it offer the user a complete sampling kit, but it also features sequencing capabilities – making it a superb all-round package. It has been billed as 'The Ultimate Home Music Studio', and who are we to argue! We hope you enjoy using it – we're sure you will – and more information on this stunning utility turn to page 15.

On Disk 37, we feature two of the contenders for 'Game Of The Year'. First of all, we have an exclusive playable demo of Electronic Arts' stunning *Risky Woods* – a platformer which has all the hallmarks of a George Romero zombie flick! In addition, *Risky* is supported by a a fully playable demo of Gremlin's answer to Sonic The Hedgehog – *Zool*. This athletic little 'Space Ninja' will amaze you as he runs, jumps and somersaults his way through Sweety World. We're sure you'll agree that these two games are stunning examples of the platform genre – and we'll be back with even better disks next month!

FOR MORE INFO ON THESE GREAT DISKS, TURN TO PAGE 15

GAMES **39** An elongated First Impressions heads off our Screen Scene section, with extensive previews of the mountains of Olympic-based games currently under development, and an exclusive look at Core Design's *Chuck Rock II: Son Of Chuck*. In terms of reviews, we lead off with EA's stunning *Risky Woods* (check out the playable demo on this month's Coverdisk), and this is ably supported by a cast featuring *Gobliiins*, *Ishar*, *Shuttle*, and Mike Singleton's biggie, *Ashes Of Empire*. Finally, anyone stuck in U.S. Gold's stunning *Bane Of The Cosmic Forge* can seek solace in our in-depth player's guide.

TECHNICAL **88 GRAPHICS DIY** In the first of a regular series, Peter Lee boldly goes where no man has gone before (unlike that cliche) and starts a crash course in getting animating. Using the Star Trek theme as his basis, our course will take the user through the various stages necessary in creating top-notch animations, and offering handy tips and shortcuts along the way. **105 DPAINT 4.1** Can the best get any better? Mat Broomfield takes a look at Electronic Arts' updated graphics wizard and its all-new scalable fonts. Is it worth the extra outlay? **108 VOYAGER** Once again, proving the variety of software on the Amiga, CU Amiga gets to grips with *Voyager* – the Amiga's answer to Patrick Moore. Using this comprehensive package, the user can pinpoint exact dates for all manner of astronomical anomalies and plot star points and the like. **112 VLAB 1.3** Importing real-life art into your Amiga can prove a trying business, but not for much longer. Nick Veitch gets to grips with *VLab 1.3*, an all-singing, all-dancing digitiser which hails from Germany.

PUBLIC DOMAIN **130 PDSCENE** Steve Keen dips his toe into the bustling pool of Public Domain software and encounters a would-be rival to Eric Schwartz in the form of a rather spiffy Wile E. Coyote demo and, as K-Tel say, lots, lots, more.
138 PD UTILITIES The best guide to PD Utilities in any mag, with Mat Broomfield examining another selection of useful PD packages – and finding a rather neat sign language program – I said INCLUDING A RATHER NEAT SIGN LANGUAGE PROGRAM...

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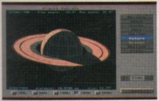


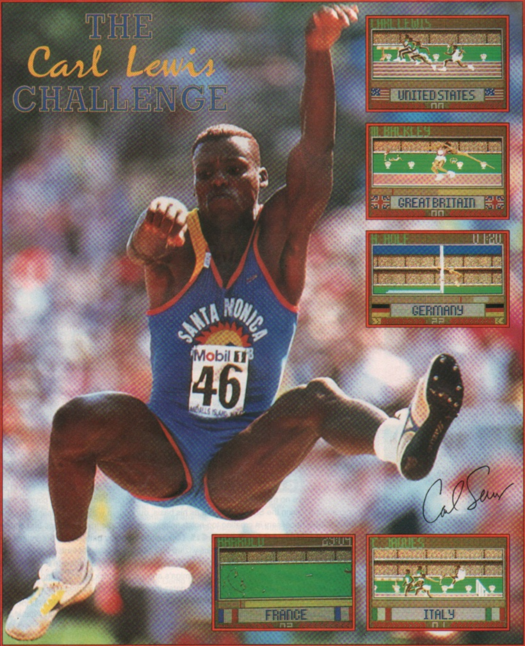
Ever wanted to plot the timing of an eclipse? If so, than *Voyager* is right up your universe...

In keeping with the space theme, Virgin's long-overdue *Shuttle* finally lifts off.

Is *V-Lab* the best Amiga digitising package to date? Turn to our review on page 112 to find out...

Kick Off II has reigned supreme within the Footy genre for years, does Sensible's game offer an alternative?

The Epsom GT6000 in all its glory. Read our comprehensive review on page 115.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MORE NEW AMIGAS ON THEIR WAY, WORKBENCH 3 A REALITY

PROBE DROP AMIGA!

In a shock decision, leading development house, Probe Software, will no longer be developing games for the Amiga.

In the past, the Croydon-based game developers have been responsible for some of the most renowned arcade and movie licences to grace the machine. Probe were formed back in the days of the 8-bit machines and developed a series of original titles (including a rather duff licence based on Russ Abbot's Basildon Bond character) before eventually moving into conversion work for the likes of U.S. Gold. Cutting their teeth on such massive licences as *Outrun* and *Side Arms*, the team then grew and progressed to the *Turtles* coin-op for Mirrorsoft and came full circle with U.S. Gold's *Outrun Europa*. However, by now Probe had also entered the fast-growing console market, and this is where they will be intensifying their efforts.

TIME: 00
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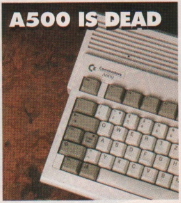
Their last Amiga product is Acclaim's eagerly-awaited *Alien3* licence, which is currently taking the form of a progressive shoot 'em up, but after that they will be sticking with the Super NES and Sega machines. Probe Boss, Fergus McGovern, explains the reasons behind the decision: 'To be honest,' he explains, 'it's not just the Amiga we're dropping, but all home computer formats. We've been looking at the market and the need for games currently resides 95% within the console area. Looking at the home computer market, it's like CU: you've expanded because the market has grown to cover the likes of samplers and graphic packages, and we're not really needed in that area. As consoles are game-dedicated, it's the logical move for us.' However, Fergus doesn't rule out a temporary return to the machine in the future. 'If we're working on a 68000-based game,' he says, 'it makes sense to convert it to the Amiga – we'll just have to see.'

Strangely, Probe's decision comes at a time when interest in the Amiga seems to be booming. Mindscape, for instance, surprised us all by announcing that the 'on-off' situation of the Amiga version of *Wing Commander* is well and truly on again – and is reckoned to have more on screen than its PC counterpart. In addition, whereas Probe are moving to the Nintendo, Mindscape are doing exactly the opposite by converting popular Nintendo licences to the Amiga. Langley-based Electronic Arts are also converting their popular console titles to the Amiga, with *John Madden* already converted and deservedly reaching a number one chart position, with *Desert Strike* and *Ice Hockey* also scheduled to appear.

Several developers were expecting Probe's decision, though – Core Design's Jeremy Smith was one: 'I think that, given Probe's strengths, they've probably done the right thing. It doesn't sign the Amiga's death warrant, though, as Probe's style ideally suits console development. As for the Amiga's future, I think it's too early to say "ooh, it's on its way out". There's still the CD unit to come, and even without that the Amiga's still got a good three years in it and all the time it's selling, we'll be supporting it.'

So before you all start flogging your Amigas and trading them in for consoles, don't bother, as the Amiga can offer all they can do, and more...



A500 IS DEAD

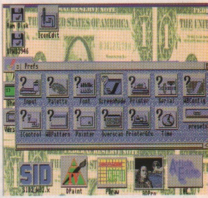
Production of the A500 Plus has stopped. They will soon be things of the past as dealers work through existing stocks. The move comes as no surprise to veteran Commodore watchers as the company tries to shift emphasis onto the A600.

Effectively, the 500Plus and 600 were competing in the same market, meaning third party manufacturers had no incentive to deliberately shift production to A600 compatibility. But Commodore promise that the A500 will still be supported by them.

Spokesman Andrew Ball said 'We are switching emphasis to the A600 for good reasons – we think the right reasons.'

Owners of the A500Plus or prospective purchasers should not be put off though. It should be totally software compatible with the old machine, the only major differences being the restyled trapdoor and the inclusion of a PCMCIA slot.

WORKBENCH 3



Registered Amiga developers are already toying with the latest release of Kickstart and Workbench for the Amiga. Version 39.46 may not make it past developers, but the word is that it has been developed for use on the rumoured 2000Plus, a new middleweight reputedly being designed to replace the now ageing workhorse of the Amiga fleet.

The changes don't seem to be that dramatic, so there is a strong possibility that it may be compatible with the existing revision in terms of software compatibility. The news will help silence the critics who have complained about Commodore's lack of development of the Amiga. It's not just another re-badged product but an actual new development.

A530 IN STOCK AT SILICA

GVP's A530 hard drive, as mentioned last issue, is now available in this country through Silica Systems. The A530 is based around probably the most popular Amiga hard drive ever, the GVP HD8+. The difference is that this unit comes complete with an '030 accelerator card fitted into the drive. The card fits into the mini-slot port, a feature of all HD8+ units, and features a Motorola 68EC030 clocked at an astounding 40MHz. A maths co-pro may also be added to the unit to give

RUMOUR HAS IT... **At last speculation begins to hot up over the new Amigas. As reported before, Commodore are definitely plotting at least two new machines from deep in the bowels of West Chester. The 2000 is a likely candidate for replacement, but also a tricky one. The 2000 is the workhorse Amiga, it is the standard used by professionals, not the A3000. Far more 2000s have been sold than the flagship A3000, and they are considered as sturdy base units for product by such as NewTek with their Toaster. If Commodore replace the A2000 – that is, not just supplement the range but cease production in favour of a newer model – they will have to be very careful. Any compatibility problems, no matter how minor, with any existing hardware would be catastrophic. Will they choose to implement the ZorroIII slot (as used on the 3000)? Will it have an '020 chip? Commodore have already said that they didn't consider the '020 a 'significant' jump in power, and we are inclined to agree with them – but pricing will be a key issue if the old 2000 is to be replaced, and even the 68EC030 chip costs money. Too high a price for professionalism on the Amiga may lead to a further revolt amongst developers, especially in the U.S.A., diversifying into the PC and Mac market and running down product lines on the Amiga.**

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OCEAN SIGN COOL WORLD, AMIGA MINI OFFICE SET FOR DEBUT

GAMEMUTTERINGS

The semi-animated cartoon feature film, Cool World, has been signed up by Ocean for the home computer formats. Starring everyone's favourite babe, Kim Basinger, the movie is about a cartoon wondergirl who can only become human by loving a man. As we went to press, no news was forthcoming on the team assigned to produce the game, but we'll keep you posted as soon as we here anything more • After entering the RPG and shoot 'em up genres, Derby-based Core Design are now set to make an impact in the bustling compilation market. Their first compilation, The Adventurers, is made up of three games – *Corporation*, *Supremacy*, and *Hunter* – and claims to feature the best in exploration games. Indeed, all three were popular with CU Amiga and have won Screenstars in their time. The compilation's release date is provisionally pencilled in for August, but a price has yet to be decided • Following the ever-popular *Faery Tale Adventure*, American development outfit, Hollyware, don't want their latest epic, *The Lords Of Time*, billed as a sequel. Using the same graphical style as *Faery Tale*, *Lords* is a massive RPG/arcade game with the player controlling a stranded space traveller. On crashlanding in a sprawling forest, the player must guide the galactic wanderer across the scrolling play area in search of a way out of the primitive and superstitious land. • Is it a fish? Is it a dinosaur? Don't ask us! *Hoi* is a little reptilian character who must make his way across a series of platform and nasty-laden screens. With all manner of bonus-giving goodies and unusual features awaiting him, the little hero's escapades will be reviewed soon • Abandoning the pitches of *I Play 3D Soccer*, Italian developers, Simulmondo, are taking to the road with *1000 Miglia*. Spanning three disks, *Miglia* is a conventional racing game using the cars of the twenties' for its basis. The basic aim is to compete in and win as many races as possible and amass a huge amount of prize money before competing in the next area. • Possibly the most eagerly-awaited Amiga game ever, Gremlin's *L'il Devil* has been in production for more than three years. Featuring lush animation and special effects, the game has been pencilled in for a Christmas release and looks likely to rival anything we've ever seen before. More news soon.

➤ further speed increases.

The drive includes 1Mb of 32-bit RAM which provides faster access to the drive and is also mapped through the '030 so it doesn't take up any of the 8Mb expansion ceiling. Silica claim that no other upgrade offers 32-bit RAM and the speed increases offered by the A530, a claim which we will hope to prove or disprove in a future issue.

The GVP A530 52Mb model with 1Mb of pre-installed 32-bit RAM will sell at £749 including VAT. Silica are on 081 309 1111

PROGRESSIVE DELIVER ON SAGE

Progressive Peripherals & Software surprised all at the Amiga Shopper show by unveiling their Rembrandt card. The hardware has been much talked about and has been 'almost finished' for quite a long time. The Rembrandt implements the SAGE graphics standard which was agreed by some developers quite a while ago but is yet to be supported by anyone else. The quest for a standard in 24-bit graphics has been around almost since the first card appeared. Now with Harlequin, Firecracker, IV24 and the soon to be released Opus board, software developers are in a bit of a quandary as to which board to support first.

SYSTEM 3 GET DEFENDER III

Harrow-based System 3 have just announced that they will be releasing an Amiga version of the *Defender III* coin-op. Sub-titled *Strike Force*, *Defender III* is a vastly improved version of the old favourite, which retains the horizontally-scrolling action of the Eugene Jarvis original, but adds more up-to-date features, such as parallax scrolling and semi-cutesy graphics. In addition, the humans the player was rescuing in the first game are now replaced by small dinosaurs, and the attack waves feature larger and deadlier adversaries.

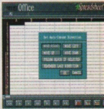
System 3 picked up the licence as part of a deal with Acclaim, and also in the package will be a forthcoming conversion of the *Super High Impact* American Football coin-op. Details on Impact are understandably sketchy at the moment, but *Defender III* is currently in the early stages of development with the coin-op used for reference. In addition, no development teams have been assigned to either yet, but it seems likely that the *Silly Putty* team will be behind *Strike Force*. More news soon.

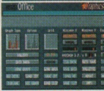
MINI OFFICE ON THE AMIGA

Old C64 users will be glad to hear that Europress' *Mini Office* has been upgraded for the Amiga. Since its launch in 1984, the home business package has clocked up sales of 500,000 units and the new set of programs have been extensively updated.

The package features five modules – a wordprocessor, spreadsheet, database, graphics and disk utilities. All the programs are totally integrated so that, for example, information can be entered into the database, exported to the graphics module to include a pie chart and then included in a wordprocessor document.

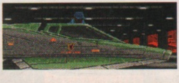
The wordprocessor includes a dictionary of 50,000 words, a spellchecker, the facility to load Ascii texts and mailmerge options – in fact, everything you would expect from a top-spec WP. The disk utilities allow the user to create 'bootable' disks, format disks and copy files, make directories and delete and rename files at the click of a mouse button. The graphics disk lets the user choose from 18 individual graphic combinations, including bar charts, line charts and area charts. The database program utilises 50 fields with up to 70 characters, and can integrate the figures into a graph format and use the search and replace facility to change important records. The spreadsheet document allows the user to easily input figures and data, alter column widths, insert, cut and paste, lock blocks and choose from up to 52 maths functions. Phew! The whole package is due to be released in early August and should cost less than £80. For further information, contact Europress on 0625 859333.





WING COMMANDER ON ITS WAY

After years of rumour and speculation, Mindscape are gearing up for the Amiga version of Origin's highly-acclaimed *Wing Commander*. CU Amiga were invited to take a peak at the nearly-finished version on a recent trip to the Sussex-based company and we were certainly impressed. If there were any doubters who thought the game wouldn't translate onto the Amiga, then rest assured that the 3D graphics are approaching the quality of the PC version and all the rotating and enlarging routines are now in place for an expected August release. After the success of DID's *Epic*, *Wing Commander* looks likely to do even better.



Also on show from Mindscape was an early version of *Battletoads*. The game was previously only available on the NES and the Amiga conversion rights are something of a coup. If you're not familiar with the game, it's basically a shoot 'em up/beat 'em up affair set over a truly massive play area and featuring some stunning and often hilarious animations. Definitely one to watch.

➤

NEW SONY MONITOR, TANK GIRL GUNNING FOR THE AMIGA

GREMLIN IN LAST LAP

Entering the final straight, the most eagerly-awaited racing game of all time, *Lotus Turbo Challenge 3*, is set for an August release. With most of the gameplay in place, and only minor tweeking still to do, the game looks set to zoom straight to pole position in the software charts. Here, we feature a selection of screen shots from the nearly-complete version, which features 64 levels and the option to race over timed stages or complete circuits. Magnetic Fields, the brains behind the game, have included a number of new racing conditions, including a mud rally, a windy stage, a futuristic circuit and one covered in roadworks. Best of all, they've also included a course editor so that players can tailor a course to suit their own specific wishes. Based on a Seed system, the editor is capable of coming up with five trillion different combinations. By entering your name into the requester, the game will generate your own individual course! We'll have an amazing coverdisk of *Lotus* 3 in a couple of month's time.

Gremlin where also recently previewing *Nigel Mansell's World Championship* racer which features all 16 circuits and takes a much more arcade-orientated approach than Microprose's *Formula One* game. There'll be a whole host of options to choose from, including three gear box ratios, three aero foil designs and a learn-with-Mansell practice lap with plenty of digitised speech. The game is already moving incredibly fast, although the number of competitors has been reduced from the standard 26 to only 12. Look for this one at the end of October.

LAP TIME
FINISH

COMICS EXPLOSION

Two of the UK's most famous comic book characters are set to star in their very own computer games in early 1993. Deadline's Tank Girl and 2000AD's law-man of the future, Judge Dredd, will make their digital debuts just as two major motion pictures featuring the characters are released in a blaze of publicity. There's no news yet as to the exact nature of the games or, indeed, who's picked up the licenses to these two hot properties.

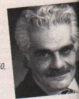
Rumours are circulating that Virgin are in the running for both games, even though their first Judge Dredd game was far from perfect and flopped on its release. Our source indicates that the company is eager to make amends for its abysmal first stab at the license by pulling all the stops out for a sequel. Virgin also have links with Jamie Hewlett, the talent behind Tank Girl, as the company commissioned the popular artist to produce a series of adds for their budget label, Tronix. When contacted by a CU Amiga newshound, the London-based company denied all knowledge of the two licenses, stating that: 'Our first Dredd game wasn't exactly brilliant, so it's doubtful that we'll be bidding for the licence a second time. As for Tank Girl – who's she?' Well, they would say that, wouldn't they...

IMPROVED PERFORMANCE, LOWER PRICES

Improving on their Trinitron technology Sony have just launched their CPD 1404S multiscan monitor.

Delivering a VGA type resoloution the new 14-inch monitor builds on the technology of the Trinitron range, now established for over twenty years. The one gun, one lens CRT system tends to give more accurate focussing (and hence a greater sharpness) than traditional multi-gun models. The vertically flat tinted screen should reduce line and image distortion whilst cutting ambient light reflection which is the cause of a great amount of eye strain. The unit conforms to the MPR2 standard, due to be made a legal requirement in 1993, which cuts the amount of low-level radiation produced. All this for only £599.

OMAR SHARIF'S BRIDGE



Grand Masters and acolytes of the noble game of Bridge are soon to be treated to an alternative when it comes to vying for slams. Until now the only option for those wishing to compete against a worthy opponent was the old classic *Bridgeplayer 2150*, but now Oxford Softworks join the scene with *Omar Sharif's Bridge*.

The major criticism of computerised bridge has always been that the computer played too rigid and inflexible a game, and was usually stuck with one bidding system. *Omar Sharif* promises a 'massive' database of bidding conventions so at least one of those objections is now gone.

Marketing something like a bridge game is a nightmare. The old hands will always reckon it won't be able to deliver the level of play they are used too whilst novices would usually rather learn from a local club. Maybe Omar can work his magic for Oxford Softworks.

FONTS FOR ALL George Thompson Services have just announced their first set of Compugraphic fonts. Originating on other formats these fonts have been copied across to an Amiga readable format using utilities supplied by Gold Disk in the latest version of *Professional Page*.

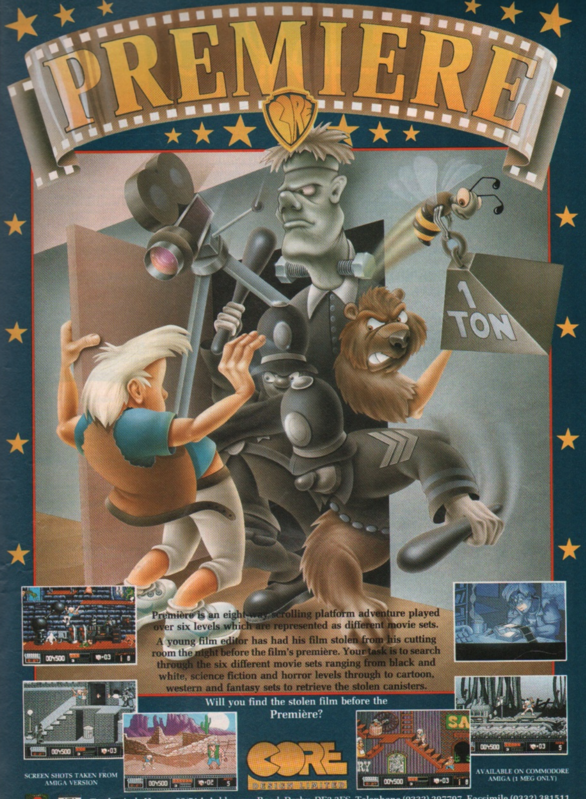
Thirty seven fonts make up this set, occupying three disks. The font format is compatible with WB2.0, *Pagestream 2*, all versions of *Professional Page* and later versions of *PagesetterII*.

The set costs just £9.99 and is available direct from George Thompson Services, Cucumber Hilll farm, Cucumber Lane, Essendon, Herts. AL9 6BJ Tel: 0707 664654

OCEAN SIGN LETHAL WEAPON

With the third Lethal Weapon film set to hit our screens within the next couple of weeks, Ocean Software were there to sign the popular duo of Mel Gibson and Danny Glover for a game based on all three films.

Due to licencing restrictions, Ocean's game won't be able to use either of Glover's or Gibson's faces, though, and the game is being developed as a cutesy platformer, with shoot 'em up overtones. The game will be split into a series of missions, with the player opting to play either cop and making the most of their particular abilities. Apparently, the game has been in development for a little under two months, but already the two cop sprites are running and jumping around a smooth-scrolling play area. However, despite this early start, don't expect the game to appear until Christmas – presumably to tie in with Lethal Weapon III's video release.



Première is an eight-way scrolling platform adventure played over six levels which are represented as different movie sets.

A young film editor has had his film stolen from his cutting room the night before the film's première. Your task is to search through the six different movie sets ranging from black and white, science fiction and horror levels through to cartoon, western and fantasy sets to retrieve the stolen canisters.

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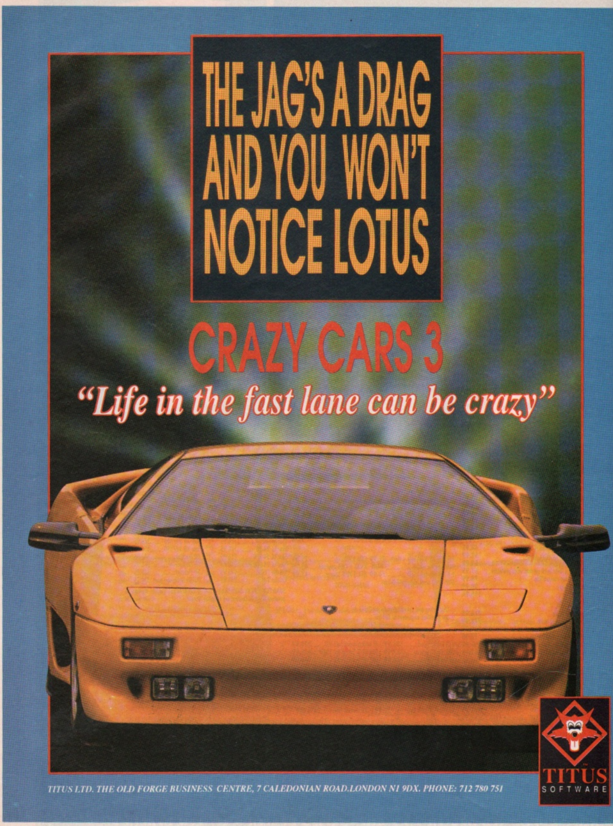
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36

COVERDISKS

36
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'The only music package you'll ever need!'
1Mb required

OCTAMED PRO 3.00

MED-ITATIONS

During the past couple of years, *MED* has consistently shone out as being one of the most powerful and flexible music packages available, and has gained a great deal of respect from hardened professionals and amateurs alike.

Now CU Amiga proudly offers you *OctaMED Professional 3.00*, a very major step forwards in Amiga sequencing technology!

***OctaMED* lets you create music using either samples, a MIDI instrument or the Amiga's internal sound generator. It also gives you a multitude of features unseen on any other music package, either commercial or Public Domain. These features offer you a combination of flexibility and user friendliness which will ensure that even the most demanding user can only gasp at the sheer power of the program.**

Although the various features are very easy to use, they make the display appear rather daunting, so I'm here to guide you gently through most of them, so that you can begin creating great music with a minimum of effort.

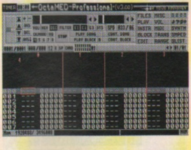
LOADING DISK 36

Insert your disk in DF0: and *OctaMed Pro* will automatically load on a 1Mb machine. If it fails to load, send the disk to CU DISK RETURNS, PC Wise, Merthyr Industrial Park, Pentreebach, Mid-Glamorgan, CF48 4DR. They will send a replacement. A helpline is also available on (0443) 693233 between 10.30 and 12.30 weekdays. Please do not call the CU offices, though, as we cannot help.

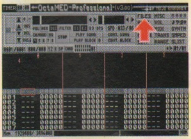
LOADING THE DEMO TUNE

Let's start by loading and playing the demo tune which is included on the disk.

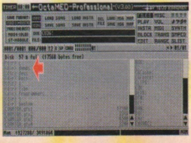
1. Load *OctaMED.*


OctaMED-Professional (v3.00)

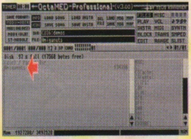
2. Click on the 'FILES' button.


OctaMED-Professional (v3.00)
FILES

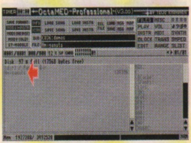
3. Click on the 'DEMOS' directory (located in the main window).


OctaMED-Professional (v3.00)
LOAD SONG

4. Click on the file called 'Amiganuts'.

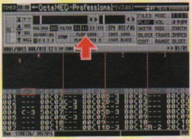

OctaMED-Professional (v3.00)

5. Go to the top of the screen and click 'LOAD SONG'.


OctaMED-Professional (v3.00)

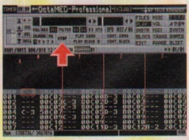
When the demo tune has loaded, you will automatically be taken to the 'Play'window.

6. Click on 'PLAY SONG' and the tune should begin to play. Numbers and letters will scroll upwards in the main window, and two sets of equalisers will start to pulse up and down (one multi-coloured, and one in shades of pink).


OctaMED-Professional (v3.00)
PLAY SONG

OCTAMED PRO 3.00

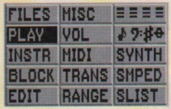
7. To stop the tune at any time, simply click the 'STOP' button.



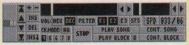
WHAT DOES IT ALL MEAN?

OK, so you've listened to the tune, and by now you're probably wondering what everything means, so let's start by taking a detailed look at the 'Play' window.

At the top right of the window is the options palette containing 15 boxes, starting with 'FILES' and ending with 'SLIST'. By clicking on these boxes, you can access other functions of the program. Because we're currently in 'Play mode, the 'PLAY' box is highlighted.

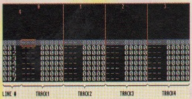


To the left of the options boxes are numerous buttons and sliders, all related to the various 'Play' functions.



Below these, is the major status bar, which is used to give information about the various parts of any currently loaded songs.

Filling up the main portion of the screen is the note display window, which shows you the notes that comprise a song. At the moment, this is split into four parts (called tracks), each separated by a narrow vertical red line. As you may know, the Amiga has four channels through which sound can be output. These are arranged into stereo pairs, with two channels being output from each speaker (if you're using a stereo amplifier or monitor). On screen, the outer two tracks represent one stereo channel, whilst the inner pair represent the other.



Below the note display window is the minor status bar, and below that is the all-important equaliser panel, which is used to give graphic information about the selection of instruments and notes that are currently being played.

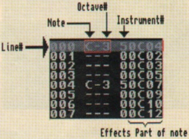
THE NOTE DISPLAY WINDOW

This is the most important part of *OctaMED*, for it is here that you will enter all of your notes, as well as information about instruments that are to be used, and any effects that are to be applied to the notes.

As I've already mentioned, this window is divided into four tracks, and as each part is essentially identical, I'll simply describe the first one which is found to the left-hand side of the window.

The tracks are divided into lines which run down the screen, and rows which run across it. The lines are numbered, and can range between 000 and 255, although in the demo song they only go as high as 063. Looking at the display, you'll notice a red outline cursor, which is used to indicate the current editing position. Using the cursor (arrow) keys, you can move this cursor around the screen. If you press the left or right arrow keys, the cursor actually moves one way or the other, but if you press the up/down keys, the cursor remains stationary and the display behind it moves.

When a song is playing, the computer reads the lines one at a time to calculate which notes should be played.



Therefore, each line represents the possible location of a note. The greater the number of lines between notes, the greater the time span between them, or the greater their duration. For example, if you enter a bass drum at line 000 and then again at line 008, the drum would sound briefly, then there would be a moderate pause until it was heard again. However, if you did the same thing with a violin, the instrument would be heard right up to the moment you played it again in line 008 because it has natural sustain.

Ignoring the line numbers, each note is represented by eight characters, and a typical one would look something like this: D-3 50C20 .

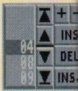
You'll notice that the characters are separated into two groups, one containing three characters, and the other five. The first group represents the actual note, whilst the second represents the instrument to be used, and any effects to be applied to it. In the above example, 'D-3' means play the note 'D' in the third octave. The number '5' tells *OctaMED* what instrument number to use. The next character ('0') is not used in this example, but the letter 'C' tells *OctaMED* to change the volume to whatever the next two charac ters specify, in this case 20.

PATTERNS

Okay, so we now know that a song is created by entering notes on lines, and we have a basic idea what the different parts of a line represent. Still, at the moment a song only seems to consist of 64 lines, which isn't very impressive!

Of course there's more to it than that. A set of 64 lines (in this case), is called a block, and a song may consist of many different blocks each linked together via the block play list. Why use blocks? Well it's simply a way of breaking a tune down into bite-sized pieces which are more manageable. Better yet, if a song contains sections which are repeated, you only need to create the duplicated section once, and then tell the computer to play it as needed.

Our demo contains 18 blocks, although only 13 of them are actually used in the song. The extra ones were left out because they didn't sound too good!



If you look to the top left of the screen just below the timer, you'll see the block editing options. The small vertical window containing a list of numbers in white writing, is the block play list used in this song. By using the two inner arrows beside the window, you can scroll through the entries of this list one by one. The two outer arrows (with the lines above and below them), will take you to the first and last entries in the list respectively.

If you go to the first entry in the block play list, you should see the number 04, which means that the song commences by playing block number 04. If you click on the + and - (plus and minus), signs, you can change the highlighted block number.

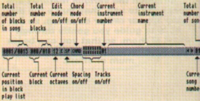
By clicking 'Ins' you can insert a new block above the highlighted one, and by clicking 'Del' you can delete the highlighted block. Click 'Ins' and the down arrow key, and you can insert the current block number – ie. the block that's being edited in the note display window.

THE STATUS BAR

Now that we understand a little about blocks, we're ready to take a closer look at the major status bar, but before we do, just load the demo song again, as described earlier on. This will then ensure that we're all looking at the same thing!

The Status Bar is divided into many parts, each of which is separated by a narrow vertical line. Each part can be altered either using the mouse, and in some cases, via the keyboard as well.

The first part displays information about the current song, and should read 0001/0015. The number 0015 tells you the total number of blocks to be played in the current song. Be careful that you don't get confused here; although our demo song plays 15 blocks, two of them are played twice (numbers six and seven), so there are actually only 13 different blocks. The number 0001, indicates the position in the block play list, so if you were to press play at this stage, *OctaMED* would start playing the first block in the list.



The next part displays information about the blocks available for inclusion in the song. Again, be careful not to get confused. 18 blocks have been defined, but they're not all used in the demo song. 000/018 indicates that out of the 18 available blocks, number 000 is currently shown in the note display window. As soon as you press 'Play Song', this number will change to 004/018 because as you remember, our demo begins by playing block number 004.

The third part of the Status bar will contain the number 12. Despite appearances, this doesn't really represent number twelve. It tells you which octaves are currently active on the keyboard, one and two in this case. This derives from traditional or keyboard notation in which notes are grouped twelve at a time, from one key, to the same key further up or down the keyboard. Therefore, the octave number dictates how high or low a note will sound when entered from the computer keyboard.

OctaMED Professional is extremely special, because unlike other Amiga music packages, it lets you enter notes across a range of ten octaves, more even than a piano keyboard.

The current octave number is controlled by pressing the function keys F1 to F5. Each key calls up two octaves at a time, and in internal sample mode they will call up octaves 1/2, 2/3, 3/4, 4/5 and 5/6 respectively. In MIDI mode, pressing F5 will toggle across four octaves (6/7, 7/8, 8/9 and 9/10), with the remaining octaves being shared among the other function keys.

To the right of the Octave indicator is the letter 'E' for Edit. When it's highlighted, notes can be entered either via the computer keyboard or a MIDI instrument.

Beside that, the letters 'SP' show whether or not spacing has been turned on. When selected, every key press moves the outline cursor down by the number of lines specified beside the letters 'SPC' in the Edit panel. The default value is two.

The 'CHRD' option is another one that directly affects note entry. If highlighted, you will be put into Chord entry mode, which lets you enter multiple note chords with ease. To enter a chord, simultaneously press all of its constituent notes, and *OctaMED* will enter them in order, in adjacent tracks.

Next to the chord selector there are 16 small boxes, arranged in two rows of eight. These represent the tracks that *OctaMED* can play, and by clicking on them you can mute or activate them. A black box signifies that the track is switched on, whilst a grey one is inactive and no sound will be generated. This demo song only uses four parts, and therefore only the first four boxes will have any effect.

Using samples or internal sounds *OctaMED* can play up to eight tracks at once, but via a MIDI instrument all sixteen can be used simultaneously.

The number 01 indicates the current instrument number, and its name (if it has one), will appear alongside the number. None of the instruments in our song are named, so the name section will remain blank.

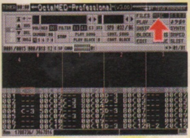
The final part of the major status bar (two arrows and the number 01/01), is used in multi-module mode. *OctaMED* allows you to create more than one song at a time, and the arrows let you move between the different songs. The number simply tells you which song is currently being worked upon, and the total number of songs in memory.

ENTERING NOTES

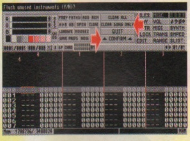
Before we start, you might like to format a blank disk ready for any saves you may wish to make...

Finished? Good! Now we're going to enter some notes to get you used to creating music, but before we can do that, we need some space. We could add some empty blocks to the end of the current song, or we could create another song using multi-module mode. However, b ecause memory can sometimes be a problem, we're going to start from scratch.

1. Go up to the options palette and select 'MISC'.

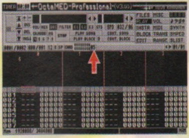


2. Select 'CLEAR SONG ONLY'. Because this is such a potentially destructive option, you must also click on the 'CONFIRM' box. A message will appear at the very top of the window saying 'Flush unused instruments (Y/N)?'. Press 'N' on the keyboard, and the stored song will be erased from memory, leaving the instruments ready for us to use.

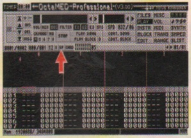

Flush unused instruments (Y/N)?

3. Go back to the options palette and select 'PLAY' to return us to the play screen.

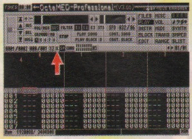
4. Using the left mousebutton, click on the second digit of the instrument number in the major status bar until instrument number 05 is selected. If you go too far, though, you can go back an instrument by clicking with the right button.



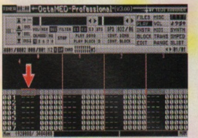
5. Select 'SP' from the major status bar to activate spacing.



6. Click on the letter 'E' in the major status bar to activate edit mode.



7. Using the cursor (arrow) keys, ensure that the red outline cursor is in the note section of track one and at line 000.



8. Press the letter Q. You should hear a bass drum sound, and the outline cursor should jump down two lines.

9. Press the down arrow on the keyboard once. The outline cursor should jump two more lines down.

10. Repeat steps 8 and 9 twice more.

11. Press the letter Q two times (you should end up on line 16).

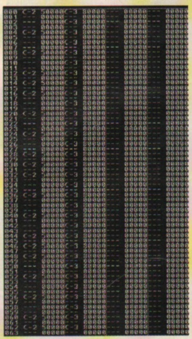
12. Repeat steps 8-11 until you return to line 000.

You've now entered the first part of your song. Press 'Play Block' to listen to it. When you've finished, move the outline cursor to the instrument section of track two, line 000.

13. Select instrument number 08.

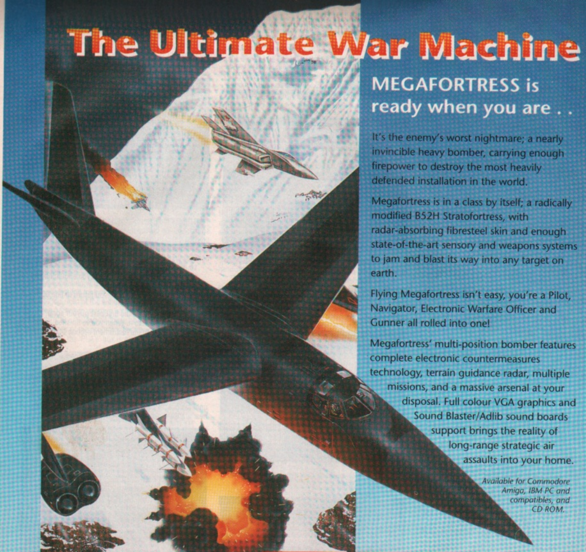
14. Press F2 to raise the octave by one. The octave indicator in the major status bar should contain the number 23.

15. Repeatedly press the letter Q on the keyboard until the outline cursor returns to line 000. You should hear a shaker play as you press the key.



As you can hear, you've just created a very quick drum rhythm. Admittedly, it's not going to win at Montrose, but it certainly was easy to make, and it was in stereo!

The Ultimate War Machine



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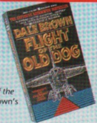
Megafortress' multi-position bomber features complete electronic countermeasures technology, terrain guidance radar, multiple missions, and a massive arsenal at your disposal. Full colour VGA graphics and Sound Blaster/Adlib sound boards support brings the reality of long-range strategic air assaults into your home.

Available for Commodore Amiga, IBM PC and compatibles, and CD ROM.

MEGAFORTRESS

Electronic Countermeasures

Offensive Weapons Station



Based on *'Flight of the Old Dog'*, Dale Brown's best selling novel.

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Navigator's Station-Global Display

Pilot's Station

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Charles Avenue, Maltings Park
Burgess Hill
W. Sussex RH15 9PQ

Tel: (0444) 246333
Fax: (0444) 248996

MINDSCAPE

For information on all Mindscape products please phone (0898) 234214. (Please note, calls charged at 36p per minute during cheap rate and at 48p per minute at other times).

OCTAMED PRO 3.00

SAVING YOUR TUNE

Of course, it's all very well creating a masterpiece, but it's no good if you don't know how to save it, so let's do that now.

1. Click on 'FILES' in the options palette.
2. Insert your blank disk into any disk drive.
3. If you inserted your disk in the internal drive, click DF0: – if not click on the appropriate drive number.
4. Click in the small black window titled 'FILE'. This may still contain the name 'Amiganuts'; if so delete that, and type in the name that you want to give this file. 5. Click 'SAVE SONG' to store your drum track on disk.

Now let's look at some more features of the program...

CHANGING THE TEMPO

Return to the Play screen where you'll find your drum rhythm just as you left it. If you look at the top of the screen, just below the words 'Octamed Professional' you'll see two sliders, with arrows beside them. These are the primary and secondary tempo controllers, and are used to set the rate at which the song plays. Most of the time, you will only ever need to adjust the primary tempo, so I'll just describe that for now.

The primary tempo is indicated by the larger of the two sliders, and its exact setting is shown by the left-hand number beside the letters 'SPD'. Its default is 033. If you click on the slider and drag it to the extreme left or right, you'll notice that the tempo ranges between 0 and 240. The higher the number, the faster the song will play. Because *OctaMED* is also compatible with *Soundtracker* and *Protracker* modules, tempos in the range 0-10 are reserved for them. Therefore, the actual tempo range for *OctaMED* songs is 11-240. Move the slider across until the tempo reads 41, then click on 'Play Block' to hear the difference it's made. As you can hear, even that small change has made quite a big difference to the speed of the song.

The Primary tempo slider is useful for changing the tempo of a song whilst you're testing out different speeds, but if you want to change the tempo of a song automatically whilst it's playing, you'll need to add it to the notes.

Here's how to do it:

1. Go to line 000 of track 1.
2. Move the red outline cursor to the right until it surrounds the sixth character.
3. Press F
4. Move the outline cursor to the seventh character of the same line and press 2.

You have now set the tempo of the song to 20. However, because *OctaMED* uses hexadecimal for tempo entries, 20 is actually equivalent to a speed of 32.

For example: 20= 2 0

$$20 = \underset{(2\times16=32)}{2}\;\underset{(0\times1=0)}{0} \qquad (2\times16=32) + (0\times1=0) = 32$$

If you now go to line 32, and repeat steps 2-4 above, simply substituting a tempo of 4 instead of 2, you'll hear the difference it makes when you click 'Play Block'.

ADDING EFFECTS

By setting the tempo of our tune, we used the effects part of the note. The letter F, when followed by a two digit hexadecimal number, means change the tempo. Similarly, there are lots of other commands that can be used in the same position as we used the F, to give different instructions to *OctaMED*.

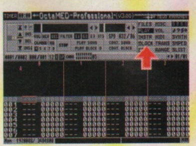
Apart from tempo, the second most important command, is the letter C, which is used to specify the volume of an instrument. The possible range is between 0 and 64, with 64 being the loudest. For example, D-3 50C04 means play note D using a very quiet rate, in octave 3 using instrument 5.

There are many other commands, including slides, pitch-bends, arpeggios and more. We'll leave the subject of special effects for another article.

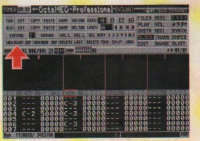
ADDING BLOCKS

Returning to our song, it would be rather short if it only consisted of a single block, so let's add another one.

1. Go to the note palette and click 'BLOCK'.

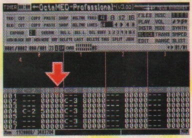


2. Click once on 'NEW BLOCK' (at the left hand side of the block options. You should see the total number of blocks in the major status bar increase from 000 to 001.

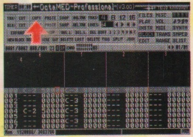


Now we're going to copy the drum tracks that we defined earlier to the new block.

3. Move the outline cursor so that it's anywhere in track one.



4. At the top of the block options screen, click on 'TRK: COPY'



* * *

THE KEYBOARD LAYOUT

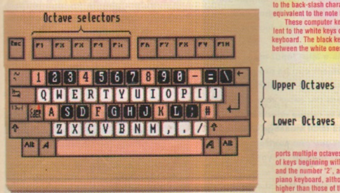
When you're entering notes, *OctaMED* configures the Amiga keyboard so that it represents a two and a half octave piano keyboard.

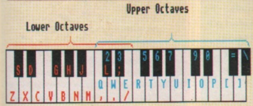
The letter 'Z' represents the note of C natural, and the value of the computer keys progress naturally. Therefore, 'X' = D Natural, 'C' = E natural etc, right on up to the back-slash character (/) which is equivalent to the note E natural.

These computer keys are equivalent to the white keys on a piano keyboard. The black keys which fall between the white ones on a piano keyboard, are represented by the next row of letters, starting with 'S' (C sharp (C#)) and ending with ';' (E flat (Eb)).

Because *OctaMED* supports multiple octaves, the two rows of keys beginning with the letter 'Q' and the number '2', also represent a piano keyboard, although one octave higher than those of the bottom two rows of keys.

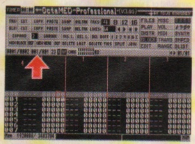
Musicians and astute readers may have already calculated the fact that there is a slight overlap in the notes produced by the computer keys. In fact, on the bottom set of keys, everything beyond the letters 'M' and 'K' is duplicated in the first few keys of the upper octave. Ie, ',' = 'Q', 'L' = '2', etc.



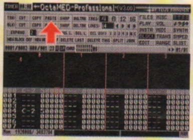


OCTAMED PRO 3.00

5. Using the left mousebutton, click on the third digit of the block information indicator (in the major status bar). The indicator should now read 001/001.



6. Click 'TRK: PASTE' to copy the first drum track into the first track of block two.



7. Using the right mouse-button, click on the third digit of the block information indicator (in the major status bar). The indicator should now read 000/001.

8. Move the cursor to track two, and repeat steps 4-6.

We've just created the second block of our song, but at the moment it's identical to the first one, so select instrument 07, go to track 3 and enter a few notes starting at line 000 so that we can hear the difference between the blocks. It doesn't matter what you enter, just press a few keys.

Click 'PLAY' in the options palette. Now we can edit the block play list so that it automatically plays both blocks. At the moment it only contains the number 00, which represents our first block. Click the inner down arrow beside the play list, and the highlighted cursor should be on an empty space below the number 00. Click 'INSI' and the current block number will be inserted under the cursor.

If you click 'PLAY SONG', *OctaMED* will play both patterns, one after the other.

CONCLUSION

Well, by now you should understand the basics of creating a song using *OctaMED*. It's not particularly difficult, but it can certainly be a very rewarding and enjoyable experience. Over the coming months, we'll be going into the various aspects of this incredible program in much greater detail.

Of course, we'll be taking a much closer look at the options palette and special effects. In addition, I'll be describing how to use *OctaMED* as part of a professional MIDI environment, giving tips on sampling and professional song creation. We'll even look at how to convert traditional sheet music onto the program, so that you can enjoy your classical or modern masterpieces anytime you like! We 'll also be giving away a great selection of free samples to increase the diversity of your creations.

Order your next copy of CU now, or a much better idea is to subscribe!

WHAT'S NEW?

***OctaMED 3.00* contains numerous advances over version two and truly deserves its 'Professional' label.**

HERE'S A QUICK SUMMARY OF THE NEW FEATURES:

1 A greatly enhanced file requester.

2 An extra command digit to increase the number of effects that can be applie to notes.

3 Extra status display showing available memory, and letting you name each block in a song.

4 High quality play option in eight-track internal sample mode requires a 68020 processor, but improves sound quality.

5 Tempo can now be set in Beats per Minute (BPM), for commercial music compatibility.

6 Instrument fine tune lets you tune instruments in steps far smaller than a semi-tone.

7 Now supports ten octaves in midi mode, six in normal mode.

8 Note by note preview mode.

9 Alternate key-maps, for easier and faster song editing.

10 Mouse can be used to move editing cursor.

11 Automatic note echo function.

12 Automatic transitions can be generated when creating synth-sounds, resulting in smoother sounding instruments.

13 Freehand draw when editing IFF or raw samples.

14 Better support when using a MIDI controller keyboard which is separate from the sound module – immediately re-transmits note data when entered from a keyboard, thus triggering the sound module.

15 Supports a MIDI input map so that MIDI instrument can be programmed to perform multiple functions on a single key press (ie. enter volume, instrument or tempo information).

16 Supports MIDI message transmission so that you can control previously unsupported features of your MIDI instrument.

17 17 new player (effects) commands, including slide and fade, tremolo, vibrato and fade, set sample start offset, block loop, change MIDI preset.

18 Additional keyboard shortcuts, including Play Block.

HOW TO SAVE INSTRUMENTS

Because *OctaMED Pro* is such an incredibly large program, we were only able to include a selection of synthsound instruments and a superb demo tune. If you don't have any more samples of your own just yet, don't worry, as the demo tune has 16 that you can easily remove and use for yourself.

Here's how to do it:

1. Load the demo tune.

2. Select the instrument number that you require (ranging from 01 to 0F).

3. Gop to the Files menu and delete the word 'Amiganuts' from the File window.

4. Enter the name that you want the sample saved as in the File window.

5. Select the disk that you want to save the sample to, using the 'Volumes' list at the centre right of the screen.

6. Click 'Save Instrument' to store your instrument to disk.

CU WANTS YOU

Have you ever wanted to have your work featured on one of CU Amiga's coverdisks? If you've designed a commercial quality game, an impressive animation, a superb slideshow or a dazzling megademo, then now's your chance to earn a little cash as well as having your work seen by over 110,000 readers. That's right, you heard the magic word – CASH. CU Amiga will personally pay to include your work on our disks, as long as it has been specifically written for us, and is available no where else. Sound too good to be true? Well, it's a bona fide offer, so if you've got a particular program that you're proud of, why not send it into Dan Slingsby, the Editor, and he'll get straight back to you with an offer if he thinks it makes good coverdisk material. We've already bought up a number of stunning demos and animations from our readers, and these will be appearing over the coming months, so don't miss the boat on this one. Please send all entries to: CU AMIGA CASH FOR DEMOS OFFER, Dan Slingsby, CU AMIGA, 30-32 Farringdon Lane, Farringdon, London, EC1R 3AU.

• •

NEW CANON PRINTER DRIVERS

Those awfully nice people at Canon have just informed us that they've produced an even more up-to-date set of printer drivers than those we've given away in the past. Along with their own preferences programs and font download programs, the printer drivers automatically sense 68030/40 boards. If you'd like a copy, simply call Canon on 081 647 4044 and they'll supply you one FREE OF CHARGE. Alternatively, call their BBS on 081 669 4586 and download the latest version from there.

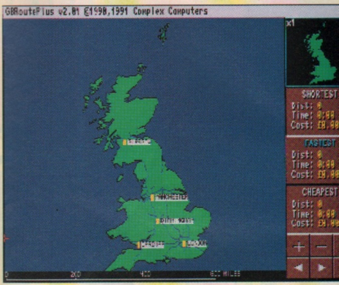
• •

NEXT MONTH

Never ones to rest on our laurels, we're currently negotiating another top-rated utility for next month's coverdisk. But that's not all. Unlike other magazines which give away a full-price program and then forget about it, we've prepared a number of tutorials on both *Sculpt 4D Junior* (our May giveaway) and *OctaMed Professional*. These will be appearing over the next few months to help you get the most out of our freebie programs. Hopefully, we'll also have enough space on our next coverdisk to give away a marvellous little program which allows you to use any Amiga font with *Sculpt 4D Jnr* as well as a selection of brilliant samples and demo tunes for *OctaMed Pro*.

GBROUTE FIX

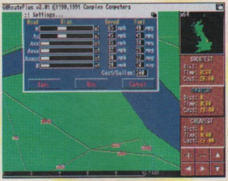
Some people may have had difficulty in getting the amazing *GBRoute* (featured on the June coverdisk) to print out their routes, after all that tricky calculation. The reason for this is that, apparently due to space reasons, our coverdisk compiler, Kenny, left most of the printer drivers off the disk. He is very sorry he did this (believe us, he is!). But, here we come to save the day! If you did have trouble getting your printer combination to work with *GBRoute* and you don't know CLI from MFI we have included a fixing script on the CU36 coverdisk.


GBRoutePlus v2.01 ©1990,1991 Complex Computers
x1
MANCHESTER
SHORTEST
Dist: 0
Time: 0:00
Cost: £0.00
FASTEST
Dist: 0
Time: 0:00
Cost: £0.00
CHEAPEST
Dist: 0
Time: 0:00
Cost: £0.00
0
200
400
600 MILES

Before you run this script it will be necessary to rename your old disk. To do this, boot up from workbench as usual. Place the *GBRoute* coverdisk in any drive and click once on the icon. Hold down the right mouse button and select the RENAME option from the *icon* menu. When the requestor appears enter the name as CU34 (don't put a colon after it!).

Now reset your machine and boot up from CU36. When workbench has loaded double-click on the *GBRoute Fix* icon. The script will now execute and eventually ask you to insert your old coverdisk. Simply follow all the prompts and in no time at all you will have a perfectly functioning *GBRoute* coverdisk.

GBRoutePlus v2.01 ©1990,1991 Complex Computers
x4
SHORTEST
Dist: 0
Time: 0:00
Cost: £0.00
FASTEST
Dist: 0
Time: 0:00
Cost: £0.00
CHEAPEST
Dist: 0
Time: 0:00
Cost: £0.00


GBRoutePlus v2.01 ©1990,1991 Complex Computers
Settings...
Road
Bias
Speed
Fuel
Cost/Gallon:
Save
Use
Cancel
x64
SHORTEST
FASTEST
CHEAPEST

In order to get the best from your printing, you may wish to copy across your preferences from your Workbench disk. Do this by either using the *CopyPrefs* program which comes with Workbench (not 2.0 or higher) or by entering the CLI and typing:

```
copy devs:system-configuration
CU34:devs
```

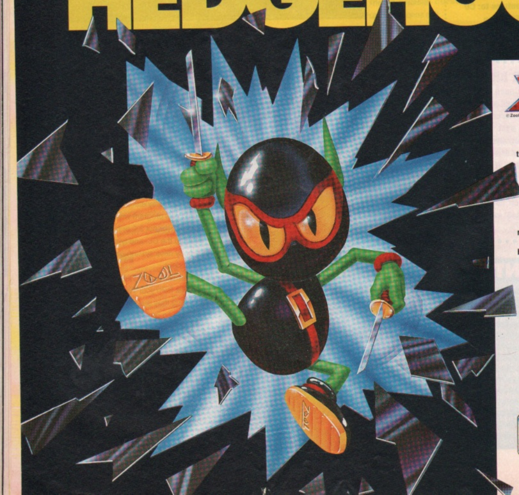
This will use the actual printing preferences from your Workbench disk, so providing they are set up correctly you will have no problem.

Happy printing and safe journeys.

WARNING

In order to create some room on the coverdisk the script will delete a number of files. These are the animations and the *AmInfo* program. If you want to keep these you must copy them onto another disk before proceeding with the script.

BAD NEWS FOR HEDGEHOGS



ZOOL

© Zool ©1992 Gremlin Graphics Software Ltd. Trademarks pendi

From the darkest corner of the Nth dimension, comes the hippest cosmos dweller ever to take centre screen. ZOOL-Ninja alien and righteous dude is on his way. Hedgehogs beware!

> “Gremlin have produced a masterpiece.”
> **Amiga action 96%**

> “Fast, action-packed, challenging and highly addictive”
> **The Sun**

COMING SOON ON:
AMIGA (1 MEG ONLY) AND ATARI ST

GREMLIN

GREMLIN GRAPHICS SOFTWARE LTD,
CARVER HOUSE, 2-4 CARVER STREET,
SHEFFIELD S1 4FS.

This month, Disk 37 is given over to two fully playable demos of the hottest games around. Starting with Gremlin's Zool we enter Sonic The Hedgehog territory with one of the most athletic sprites ever. Then we go into the woods today – EA's stunning Risky Woods, to be precise..

37

COVERDISKS

LOADING DISK 37

Put the disk into the Amiga's internal drive, and switch the machine on. A bank of icons will appear. Simply double-click on the required icon, and it will load. If it fails to load, remove any external cartridges, drives or printers. If the problem persists, please contact PC Wise on the phone number given elsewhere in these pages. Please do not ring the CU offices regarding disk problems.

IT'S MAGIC

Not content with his athletic abilities, Zool is also a regular little Paul Daniels and can get himself out of particularly nasty situations by unleashing one of the many spells he can perform. The ammunition for these spells are dotted liberally throughout each stage and are small lettered discs which appear in a variety of colours. Whenever Zool is surrounded by a series of nasties, by pulling down on the joystick and pressing fire, Zool will dip into one of his many pockets and unleash a spell into the air. Once cast, these will then act as either some sort of smart bomb, or will endow our hero with temporary powers – for example, one of them effectively doubles his powers by creating a flickering ghostly image which acts as a decoy for the enemy's unwanted attentions.

00085 1
HI 01140

ZOOL

GREMLIN – 1MB ONLY

With the Nintendo and Sega consoles offering Mario and Sonic respectively, the Amiga has yet to sport a game characters as easily identifiable for the machine. Gremlin, however, are set to propose such an icon, and CU Amiga is here to bring you an exclusive taster of what their flexible Space Ninja – the titular Zool – will offer. Following last month's introductory demo, this month you can actually get to grips with the athletic little fellow as we proudly present one of the stages from the game's Sweet World. Zool is initially given five lives, the length of which are determined by a trio of health points. Whenever our black-cad hero comes into direct contact with a nasty (ie. he runs into one rather than bouncing on it), he will lose one of these and, on the depletion of all three, he eventually explodes in a mass of coloured pixels – only to be replaced seconds later. The basic aim of the demo is to guide our hero from one side of the massive level to the other in an attempt to find the exit. However, as easy as that may sound, it's harder in practice!

After loading, a title screen duly appear inviting the player to press the firebutton and join the fun. Our demo is taken from the game's first World and introduces the player to the game's many intricacies. Set within a world made up of Smarties, Liquorice Allsorts and countless other sweets, this bright and gaudy landscape is similarly fraught with such dangers as spiked pits and enemy sprites resembling Jelly Tots and the like. Controlled using the joystick, Zool can be made to run and jump through this oddball world, and the screen scrolls in the customary eight directions to keep up with the fast-moving sprite. However, rather than sticking to the running and jumping malarkey favoured by so many other platformers, it is Zool's athletic abilities which raise him above the likes of Robocod and Mario – he's even on a par with a certain blue, spiky mammal! As he scurries to and fro, our nimble hero can climb vertical walls and, depending on the speed at which he is running, Zool can turn perfect somersaults whilst landing on an unsuspecting nasty – crushing it in the process. In addition, he is also armed with a limited supply of bullets which can be used to blast a path through the ever-approaching meanies, and he can also collected assorted magic potions which perform a variety of special effects (see panel).

In addition to such running, jumping and shooting japes, Zool can also amass a collection of bonus points to add to his ever-growing score. These will vary from level to level in the final game, but in our demo consists of sweets of varying sizes, with the larger offering suitably high bonuses. However, also dotted amongst the masses of confectionery are small lettered discs which further Zool's magical capabilities when collected, and extra supplies to supplement his ammunition supply.

37
EXCLUSIVE TO CU AMIGA
RISKY WOODS MASSIVE PLAYABLE LEVEL
ZOOL COMPLETE PLAYABLE LEVEL
CU AMIGA

RISKY WOODS: Special playable level of Electronic Arts' brilliant platform slash 'em up. ZOOL: Gremlin's space ninja makes his debut in this huge playable level. (1Mb required)

CONTROLLING ZOOL

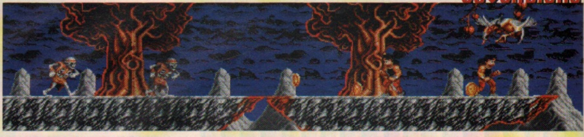
Up – Jump, somersault (depending on speed) jump up wall

Left – Run/ jump left

Fire – Shoot bullet, swing sword, cast spell (with down control)

Right – Run/ jump right

Down – Duck, cast spell (when used with firebutton)



RISKY WOODS

ELECTRONIC ARTS

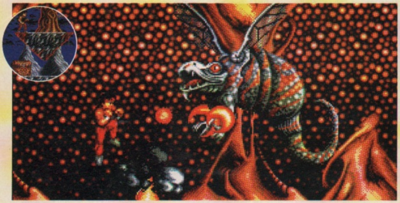
Developed by Spanish coders, Dinamic, *Risky Woods* is a stunning platform extravaganza soon to be released by Electronic Arts. Drawing its inspiration from the many console-style hack 'em ups, *Risky* is a horizontally-scrolling platformer with the player assuming the role of young Roham – a would-be hero and the star of the show. *Risky*'s scenario revolves around the kidnapping of a powerful band of Monks, and Roham's attempts to free them. An evil force has swept the order away and has spread them through the forest of the title. To free them, Roham needs to locate a number of keys which are also scattered throughout the woods.

Obviously, though, this isn't going to be as easy as it sounds, and the Risky Woods live up to their name by playing host to all manner of unworldly and evil creatures. Ranging from rotting skeletons to mutated flying creatures, these were natural recruits to the evil being's cause, and now flock from either side of the screen to sap Roham's health. Luckily, though, Roham is armed with an unlimited supply of throwing knives, and these are used to dispose of the oncoming masses. Roham is joystick-controlled and can run, jump, shoot and duck via assorted combinations of the stick. The weird forest is made up of a series of ledges, below which lurks a bottomless – and obviously deadly – abyss. However, death also lurks on these platforms as with every hit Roham takes, his energy is reduced until he eventually loses a life and collapses in a heap on the floor.

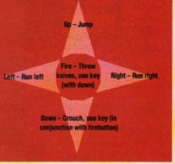
It's not all bad, though, and appearing regularly throughout the game are large caches of money which appear whenever a nasty is killed. These are collected by standing Roham over them and pulling down on the joystick, and the player can then go to a shop and buy more powerful weaponry. In addition, these caches also offer a mixture of good and bad 'extras' – for instance, whilst one icon will grant the player with temporary immunity in the form of a protective ball, another will stun him or send him back to the start of the level. By far the most important of all the collectable objects, though, are the huge golden keys themselves. Each of the kidnapped monks is located somewhere within the level and has been imprisoned within a statue-like casket, which is in turn protected by a large obelisk. These obelisks obscure the way to the monks, but by pulling down on the joystick and pressing fire, the collected golden key will destroy the obelisk, allowing you to free the Brother by chipping away at his stony confines with your knives.

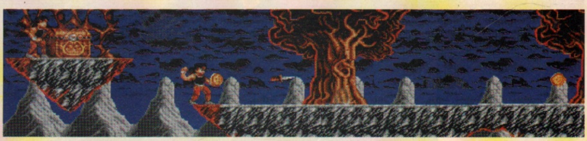
Our demo contains two monks to free, but on completing the level, you will then be given the chance to lob a few arrows at one of the game's many guardians before the demo loops back to the first stage.

CHEST A MINUTE **Every now and then, a chest will mysteriously drop from the sky, and await Roham's attention. On shooting this, it will spew forth a series of colourful icons which have varying effects. On the plus side, collecting the orange sphere will grant Roham with a temporary guardian which swoops in a wide arc around him, killing anything that gets too close. However, the chests also contain icons which will send Roham back to the start of the level and poison apples which send him to sleep whilst the enemy come in and whittle away his valuable energy.**



CONTROLLING ROHAM


Up – Jump
Left – Run left
Fire – Throw knives, use key (with down)
Right – Run right
Down – Crouch, use key (in conjunction with firebutton)



ISHAR

LEGEND OF THE FORTRESS

AT DAZE MARKETING WE BELIEVE THAT "ISHAR" IS THE BEST RPG CURRENTLY AVAILABLE ON THE MARKET.

BUT DON'T TAKE OUR WORD FOR IT....

"SIMPLY THE BEST OF ITS KIND."
CU AMIGA.

"A GAME RPG FANATICS WILL DIE FOR."
CU AMIGA 89%

"The exciting sense of adventure makes ISHAR incredibly smart."
ZERO 89%

"A truly great adventure with the best graphics about."
ST REVIEW 87%

"Don't pass this one by, MUCH BETTER THAN EYE OF THE BEHOLDER 2."
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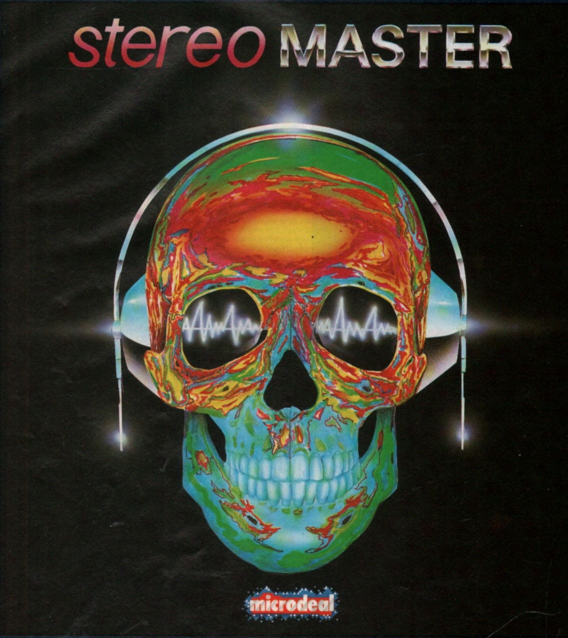
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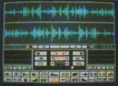

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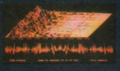

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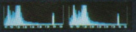

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create your

Demos, not to be confused with Deimos (the second moon of Mars), have probably sold quite a few Amigas in their time. Even if you didn't buy on the spot after seeing a coded masterpiece, you would have to have been held hostage in Beruit for six years not to have seen at least one mega-impressive demo.

That's the trouble with demos: they are usually too impressive. It's easy to be put off making your own when you see the quality of available demos. Fear not – CU is here! Over the next few pages we'll be giving you the lowdown on demo creation. Steve Packer helps with animation; ace coder Jolyon Ralph bashes metal; and *Med* maestro Tony Horgan shows us how to construct a belting tune. Everything you'll ever need to know is here!

ANIMATION

Want to produce an animated intro, but don't know where to begin? Steve Keen talks to innovative demo-maker, Steve Packer, about the tricks of the trade.

1 POWER PACKER

Steve Packer has built up quite a reputation. He's the talent behind the excellent Chuck animations, featuring a balloon-headed dude with incredible chameleon-like powers who takes on a different guise in each short anim. One minute his diminutive character could be flying across the rooftops in his Batman uniform and the next he could be reenacting a scene from Terminator 2. The subtle blend of humorous animations set within contemporary situations has made Steve's Chuck character something of a celebrity on the PD circuit.

But that's only half the story. Steve has produced more than 150 animations over the course of the last three years, and most of them have nothing to do with his bubble-headed boy-wonder. Perhaps his best work is a series of science fiction demos, featuring a vast array of characters and situations, which build up over a series of screens into one complete story per disk. You'll probably have seen some of these reviewed in our PD Scene pages over the last couple of years. *Extrodyne*, which features an intergalactic space-chase between prison warders and escaped convicts, scored no less than five stars for its pixel perfection and tense, atmospheric graphics.

When we were planning this feature on top demo creators, Steve was first on our list. As mentioned, Steve is an old hand at creating demos, and was only to glad to share some of his expertise with CU AMIGA's readers.

HERE'S THE PLAN

'A great deal of planning goes into my animations,' opines Steve. 'I don't just sit down at my monitor and the graphics magically appear. It's the result of a lot of hard work. It's getting increasingly harder to come up with new ideas and to do something different and totally original. A good plot and hook are just as essential as good artwork.'

Steve's first task, after working out the bare ingredients of his storyline, is to sit down and create a selection of rough drawings of what he wants to inlcude in his new demo. 'If you take *Extrodyne One* as an example, that was storyboarded right

WHERE TO FIND SHOW ANIMATION

As we said, *Show Animation* is widely available from most PD libraries. However, if you and your money are particularly good buddies, then the chances are that you've got a disk that uses the utility anyway. Simply load up a version of *CLImate*, *DiskMaster* or *SID*, and bring up your disk with the Show Animation program on it. If you're using one of Steve's demos, it'll be in the C directory. Once you've located it, if you have two drives simply copy it across. If you only have one you'll have to copy it into RAM first and then transfer it. Type in 'Showanim' and you'll get the program's instructions.

rown demos

from beginning to end,' confesses Steve. 'It saves me a lot of time in the long run and helps finalise ideas and sort out what's practical and what's just pie in the sky.'

After the initial boards have been completed, Steve loads up his aging copy of *DPaint III* and jumps straight in. 'Everything I do is done in *DPaint*. I just find it an incredibly useful package. It's not perfect, by any means, as it's missing such useful editing facilities as a cut and fade option, but it is incredibly user-friendly.'

SKETCHY DETAILS

'Some people like to sketch out their work first,' continues Steve, 'but I just get stuck into a black background and start splashing the colour around until I come up with the effect I'm after. It really is as simple as that. 'So how long does an average picture take to produce? 'A very detailed picture will usually take about two hours, with an animation taking anywhere between four and five.'

'*Extrodyne* took me three weeks to complete. I get a lot of my inspiration for different screens from people like H. R. Giger (the artist behind Alien's set designs), Rodney Mathews (Fantasy artist) and the lighting techniques of James Cameron. Graphically, I go a bundle on Dan Malone's *Speedball 2* and really liked Mark Coleman's graphics for *Xenon 2*.' This is quite evident in some of Steve's game mock-ups which he is currently touting around to numerous software houses. Incredibly, no-one has signed him up yet, but it can surely only be a matter of time.

AMIGA KIT **Steve's set up for creating his animations includes: A 1Mb A500, a Philips' monitor, external disk drive, *Deluxe Paint III*, *ProTracker*, *TechnoSound* sound sampler, *Show Animation*, *Noise Player* and a Nashka mouse. Simple stuff, but it just goes to prove what you can do with average equipment and a lot of talent.**

With the graphics finished, Steve settles down to compiling his master disk. Grouping together all his finished pictures and animations, these are then saved out to another disk in the order in which they will appear in the final version. 'The secret behind a successful demo,' he confides, 'is a little program called *Show Animation*. It allows you to load pictures and frames into it and give each sequence a special name, such as Show1, Show2 and Show3, etc. This helps ensure that the numerical order in which they are placed is how they will appear in the demo. The program flicks through the pictures, one after another, so that your animations are up and running. *Show Animation* also lets you use HAM mode, placing a massive 4,096 colours at your disposal.'

SOUNDS GOOD

Once the start-up sequence has been written and the pictures assigned to their assorted names, Steve then adds the sounds. 'I have to confess,' admits Steve, 'that synchronising the special effects with an animation is a bit of a hit-and-miss affair. That's why I tend to stick to a single atmospheric track rather than lots of SFX.'

'I use a *TechnoSound* sampler to grab sound bytes from CDs and then mix them all up using *ProTracker*. I start with drums and back beats and build up from there. Samples are memory intensive beasts, so I'm quite choosy in what I use. If I've overdone it a bit, I'll compact them all using *Power Packer*. Once I've added the track to the disk, the last thing to do is load the start up sequence into a text editor, initiate it and watch it go.' With several projects currently on the boil, it seems that Mr Packer is destined to be a very busy man...

FIVE TIPS FOR BETTER ANIMATIONS

If you've always wanted to get the inside info on how a certain effect is pulled off, but were afraid to ask, don't worry. Steve Packer is here to share some of his top tips.

Hints and tips

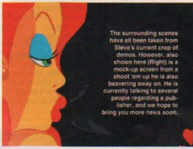
1. Subtle changes to existing artwork can save an immense amount of time and hard work. For example, during the making of his *Extrodyne One* demo, Steve Packer used the same space-ship twice, although you'd never have guessed. The tiny craft on the landing pad at the start of the demo was enlarged five times and then had subtle details altered to give the appearance of a totally new ship.

2. When working in *DPaint*, Steve keeps a selection of handy sprites on the spare screen. These can be picked up as brushes at any time and simply dropped in as and when required. Obviously, this method saves an inordinate amount of time that would otherwise be spent on searching through loads of disks and directories.

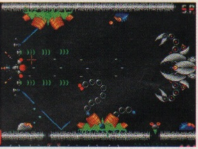
3. If human figures prove too hard to draw in detail, why not use silhouettes? Using just black and white also conserves space.

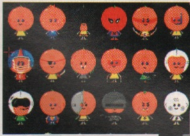
4. It's the little touches that add life to an animation. A tiny flashing light, for example, will do wonders for a static screen. Likewise, a moving piece of machinery or even a glowing fire will also have the desired effect of suggesting movement.

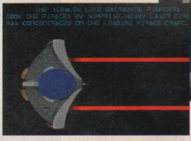
5. If you find yourself short of colours, pixel plot like crazy. By using a stipple effect between two colours you can create an entirely new shade and smoothness to your work.



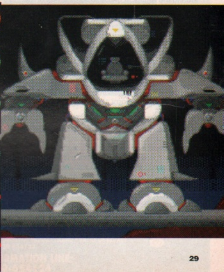
The surrounding scenes have all been taken from Steve's current crop of demos. However, also shown here (Right) is a mock-up screen from a shoot 'em up he is also beavering away on. He is currently talking to several people regarding a publisher, and we hope to bring you more news soon.







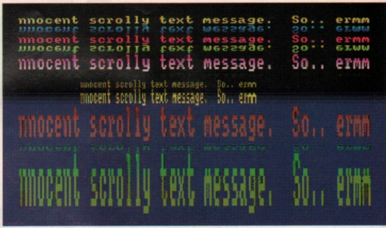
THE STEALTH LIKE EXTRODYNE FIGHTERS TOOK THE PIRATES BY SURPRISE.HEAVY LASER FIRE WAS CONCENTRATED ON THE LEADING PIRATE CRAFT.



create your own demos

CODING

So far so good, but the problem most people have with demos is the cunning code which will display vector graphics and twisty bouncy things. Jolyon Ralph provides an introduction on how to code your own scrolly message demo.



nnocent scrolly text message. So.. ermm

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2 WELCOME TO...

The Amiga is a wonderful machine to program. As well as having one of the nicest operating systems around, it has a mean set of custom hardware chips, and an excellent processor, the 68000, for controlling them.

The Copper controls the Amiga display, it allows the Amiga to do deeply wonderful things like multiple resolution screens on the same display. To see this in action, load up *Deluxe Paint* or something equally colourful, make sure that Workbench is running in the background and drag down the title bar. You will see that a medium resolution screen (Workbench) is running at the top, and that a low resolution 32-colour screen (*DPaint*) is running underneath. Now, when you scroll the screen up and down, how much work is the Amiga doing? On other, more primitive machines, to do something like this would require tremendous processor power, on the Amiga it takes virtually no processor time at all.

The Blitter is similar, but far more complex and versatile. Blitter stands for BLock Image Transfer, and is used for copying blocks of graphics memory around the Amiga. It can also scroll areas of the screen and perform complex logical operations on graphics that are the heart of every monster and alien to grace an Amiga game.

AGNUS

Both of these two components live in the Agnus chip inside your Amiga, and both can be programmed with relative ease, as shown in the example code.

Have a look at the source code (see page 34). You don't have to worry about how it all works for the moment.

The code from the beginning of the code up until the label WAIT: sets up the demo so that it is ready to run.

The two line routine at WAIT: waits for the user (that's you) to press the left mouse button. Once it's been pressed it carries on with the rest of the code (down to the RTS), which closes everything down neatly, and quits.

So, what makes the text scroll around the screen?

Well, the part labelled 'interrupt set up' tells the computer to run a specific routine (starting at new: in the code) at certain times. The routine in this code is a copper interrupt. As I mentioned before, the Copper is effectively a separate processor with its own commands. One thing this copper can do is trigger the 68000 to do a particular task at certain times, in this case it is triggering it every 50th of a second to call the routine, which moves the scrolling text.

THE SCROLLY

Here we get to another fundamentally important point: the scrolly. There is only one. It may look on screen as if there are several of different size, colour, resolution and some are upside down, but if you look at the code carefully you will only find a small graphic display (of around 320 pixels horizontally by 9 deep) with a single scrolling text.

What's going on? Why are there lots of them pointlessly scrolling across your display? Here is where the copper magic comes into its own. The copper has its own language, written in what's called a copperlist. Every time the Amiga picture is redrawn (on a European system this happens 50 times a second, in the US it's 60 times per second) this code is executed. Coppercode is very limited compared to 68000, it consists of three instructions, MOVE, WAIT and SKIP, and SKIP is hardly ever used.

With a 68000 assembler the easiest way to write copper code is by directly coding the machine language values for each instruction into a table of data with the DC.W command. In 68000, it would be a nightmare remembering each instruction (The RTS instruction is $4e75, for example), but with Copper code it's easy with only three instructions to remember.

Look at the copper code in the example, starting with 'newcpr'.

Although you may not recognise it, the first few lines tell it to set up a display, giving various parameters such as the number of bitplanes (to determine the maximum number of colours on the screen, in this case 1 bitplane, 2 colours), the position and size of the screen and the address in memory of our graphic data to display on the screen, in this case the small block containing our scrolly text.

ASSEMBLER **In order to code effectively, you'll need an assembler (unless the thought of painstakingly converting all your code to hex appeals to you). The most highly thought of assembler is *Devpac*, now in its 3.0 incarnation and available from HiSoft (0525 718181)**

COPPER COMMANDS

There are two types of copper command shown in the listing.

```
dc.w    BPLCON0,$1200
```

This is a move instruction, it means move the value $1200 into the custom chip register BPLCON0. The Custom chip registers, starting at $dff000 in memory are effectively switches that control the custom chips. An address dropped into one chip register may tell the chip that there is a graphic to be displayed at a particular address, another chip register may tell the Amiga at which particular frequency a sound should be played. Any communication to the custom chips, the heart of the Amiga, eventually goes through these custom registers.

```
dc.w    $2c09,$fffe
```

The other type of register is a copper wait register, this looks the same as a move instruction, except the first word is always odd (as in the opposite of even, not odd as in 'I saw the Loch Ness Monster go past on a moped, that was a bit odd'). All that the copper wait instruction does is, well, wait. It waits until the beam position has reached the co-ordinates given in the first word (in this case $2c vertically and $09 horizontally). Note that it doesn't sort these, so if you wait for $29 and then wait for $28 it will wait for $29 and then carry on. The second word is the accuracy that the copper wait should be (you can say wait for *somewhere* on vertical line $50).

One particular copper instruction that I've used quite a bit is the BPL1MOD register. This is a value that determines the number of bytes added to the current display position at the end of each line. It starts being set to two. This way there are two bytes to the right of each line on the screen which are not displayed and are skipped. I can draw new letters onto the scrolly in this area and smoothly scroll them onto the displayed area.

NEGATIVITY

But by being silly and using it for things it wasn't designed for, you can do some interesting things. What happens when you put a negative number into it? Well, by putting -82 into it, you

IT'S TOUGH AT THE TOP...

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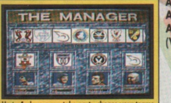
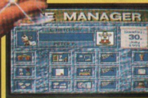
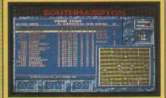


Up to 4 players can take part - choose your teams from the top 3 current league divisions.

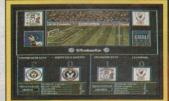
Screenshots from Amiga version.



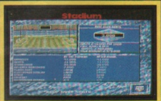
The main menu - click on icons to select the various options



Select your team members and train them according to the strengths and weaknesses of the opposition.



It's match day! Liverpool have just scored against Coventry in the 59th minute.



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BUT IT'S TOUGHER AT THE BOTTOM

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get the picture starting to be displayed backwards. So, it displays a scrolly the right way up, I then wait for 9 lines, and reverse it, wait for another 9 lines and reverse it back to normal. So you get the same scrolly repeated, the normal way up and upside down. See if you can work out how the double height scrollies are done (A clue, -40 into BPL1MOD repeats the previous line of display).

One other thing mentioned is that the screen was only set up for 2 colours. How can it be so colourful? Well, it's only displaying 2 colour registers (foreground and background). The copper is changing the colour of these registers at every line, so the colour values are changing so rapidly and accurately that it appears that there are more colours on screen, another popular copper trick, often used in games. Check out COL0 (background) and COL1 (foreground) in the code to see how it's done.

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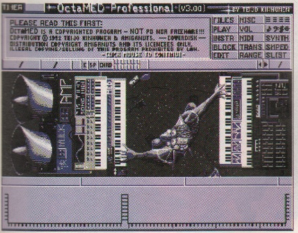
MUSIC

Tony Horgan lifts the lid on music making for demos and shares a few trade secrets...



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-CLICK MOUSE TO CONTINUE-

3 TRACK ON

I know what you're thinking... How can you produce a soundtrack for your demo, if you don't know your brass section from your elbow when it comes to music? Well, thanks to a wonderful invention known as the *Soundtracker*, you can do just that with no call for virtuoso performances or brain-twisting coding.

Soundtracker itself is getting on a bit, but its spirit lives on in the form of updated versions. *Noisetracker*, *Protracker*, *Startrekker* and company each have their own little quirks and features, but the differences are mainly cosmetic. Other options include *MED*, *OctaMed*, *GMC*, *Oktalyser*, or even *Audiomaster*.

THE RIGHT TRACK

As for which to choose, a lot comes down to personal preference, but there are some important considerations to be made. If you're using Demomaker or some similar program to write your demo, you'll probably have to go for one of the *Soundtracker* permutations to ensure compatibility. However, these Trackers use a slightly non-standard environment, which can make disk access very frustrating until you get used to it. If you have the facility to play the modules in your demos, *MED* will probably be your best bet. It's got plenty of features, and does most things by the book.

The eight channel programs, such as *OctaMed* and *Oktalyser*, tend to have two main drawbacks: they slow down other parts of your demo, and the sound quality is halved. The final option is to use something like *Audiomaster*, with its multiple loop function. The trouble with this, is that it can only play one sample at a time, and creating anything original is almost impossible.

SIZE IS IMPORTANT

Before you get on with your first piece, you should consider two main points. First of all, how much memory are you going to have available for the music? Remember to leave enough room for the demo code, graphics, buffers, and space on the disk for any additional parts.

Let's say you can use 50K for a soundtrack. That rules out just about any long samples you might have had in mind. It's unlikely that you'll be able to manage a decent chart remix with so little memory, so a predominantly instrumental tune will be in order. However, this doesn't mean you have to churn out one of those hackneyed plodding tunes with worn out chord changes. If your compositional talents have got lost in the post (join the club), try a remake of your favourite tune, but make sure you don't use any of those twee samples that make your Amiga sound like a castrated C64.

With anything over about 150K at your disposal, the options are opened right up. Now you can use vocals, drum loops and sound effects to move your mixes into the realms of 'real' music. House music is an obvious choice, and a popular one, too. If you want to go for something a bit different, how about having a crack at a hip hop track? Surprisingly there's virtually none around on the demo scene. If you've got some mellow psychedelic graphics, try some ambient house, the sort of stuff heard from The Beloved, Moby, or The KLF in their more spacey moods. Decent rock soundtracks can be achieved with a some good guitar samples, as long as you don't make the common mistake of attempting a Van Halen-style guitar solo. Getting that kind of expression out of a sampler is impossible, as many previous attempts have demonstrated.

TAKE IT TO THE BRIDGE

If you're writing a number of soundtracks for a megademo, you may find there's not enough memory to keep one piece of music playing while the next one loads. One way around this is to write a short interlude that stays in the computer's memory throughout the demo, bridging the gap between two bigger pieces. When the user clicks the mouse to move to the next part, you can cue the interlude, trash the previous tune, and load the new one in its place, along with the new gfx and so on.

Whatever style you go for, try to resist using too many over-familiar samples.

If you don't like the idea of someone 'ripping' your tune from the demo and snooping around in it, you can use this standard nosey-parker irritation technique. Change all the instrument names in the song, so that when printed out in sequence, as they are by ripper programs, they spell out an abusive message (chortle, chortle!). A more useful variation of this technique is to use the instrument names to display your name and address. You may have a contacts screen at the end of the demo, but the two can often be separated by a third party intro compilation disk.

TAKE IT ROUND YOUR MATE'S

One last thing you might want to do before washing your hands of the soundtrack, is to take it round to your mate's house and see what it sounds like through his Hi-Fi (and to get his opinion of whether it's a load of crap or not). If you've been listening to the music through a small pair of speakers, you may find the bass is rather overpowering on a decent Hi-Fi, or vice versa. Most PD fans with an interest in music will have their machines hooked up to a good home stereo system, so unless you're doing a mix for your local rave, bear that in mind when you're putting the finishing tweaks to your masterpiece.

IN THE GROOVE

Once you have finished your tune it is a simple matter to copy it on to a disk with a suitable player (e.g. *OctaPlayer* if you are using *OctaMed*). It is even possible to play a module directly from a machine code demo using the player library.

By the way, if you do manage to get your tunes played to a bigger audience than the Sunday afternoon barbeque crowd or manage to produce something just that little bit different, please be sure to let us know.

RUN TIME ERROR **Because we had to squeeze so much onto this months disk, the actual code for Jolyon's Demo could not be jemmied on. Look out for it on next month's super-soaraway CU Disk 38.**

create your own demos

DEMO CODE

All the code you'll need...

```
opt   c-,o+,l-              ; No case sensitivity, Optimize on
section      cu,code

; ; This code is mostly system-friendly.
;Disable ENFORCER when running
; if used, as it will moan most horribly at my copper setup routine.

_LVOForbid          equu          -132
_LVOPermit          equ           -138
_LVOOpenLibrary     equ           -$228
_LVOCloseLibrary    equ           -$19e

           lea          gfxlib,a1
           moveq        #0,d0
           move.        l 4.w,a6
           jsr          _LVOOpenLibrary(a6) ; Open Graphics library
           tst          d0
           beq          error
           move.l       D0,gfxbase
           move.l       4.w,a6
           jsr           _LVOForbid(a6) ; Suspend mul  titasking

           move.l       #screen,d0          ; Store screen address in
           move.w       d0,pl0l             ; Copper list
           swap         d0
           move.w       d0,pl0h
           move.l           gfxbase,a6      ; Set up copper list
           move.w       #$80,$dff096
           move.l           $32(a6),oldcpr
           move.l           #newcpr,$32(a6)
           move.w       #$8080,$dff096

           ;            interrupt set up
           move.l       $6c.w,old
           move.l       #new,$6c.w
           move.w       #$8010,$dff09
           move.l       #0,0                    ; Wipe location 0 for sprite
WAIT:      btst         #6,$bfe001      ; Test for left mousebutton
           bne.s         wait
           move.l       gfxbase,a6
           move.l       old,$6c.w               ; Return to workbench
           move.w       #$0080,$dff096
           move.l       oldcpr,$32(a6)
           move.w       #$8080,$dff096

           move.l 4.w,a6 jsr _LVOPermit(a6)
           move.l gfxbase,a1 ; Close graphics library
           move.l 4.w,a6
           jsr _LVOCloseLibrary(a6)
           error:
           clr.l d0 ; exit routine
           rts
new:       movem.l       d0-d7/a0-a6,-(sp)      ; save all registers
           and.w        #$10,$dff01e           ; check if it is
           beq.s        out
           move.w       #$10,$dff09c
      our interrupt code starts here
           bsr          scroll
           moveq        #0,d0
           move.w       scrlpos,d0
           sub.w #1,scrlpos
           cmp.w #0,d0
           bne.s .noprt
           move.w #3,scrlpos
           move.l textpos,a0
           move.b (a0)+,d0
           move.l a0,textpos
           cmp.b #0,d0
           bne.s .print
           move.l       #text,textpos
           move.b       #32,d0
           .print bsr printchar .noprt ; our interrupt code ends here...
out:       movem.l      (sp)+,d0-d7/a0-a6
           move.l old,-(sp)
           rts

printchar: ; this routine prints the character in d0
           sub.w  #32,d0    ; convert from ASCII
                            ; to space = 0, ! = 1, etc
           lsl.w   #3,d0                        ; multiply by 8
           lea          font,a0
           add.l        d0,a0
           lea screen+40,a1
           moveq #7,d1
           .lp
           move.b       (a0)+,(a1)
           add.l        #42,a1
           dbra         d1,.lp
           rts

           scroll:

           lea          blitstart,a0
           lea          2(a0),a1

buyFractalUniverse

            btst           #6,$dff002 ; wait until blitter ready
        bne.s   buyFractalUniverse   ; :-)
                ; Seem to be a lot of ads in this code?
        move.l a0,$dff054
        move.l a1,$dff050
        move.l #-1,$dff044
        clr.l    $dff064
        move.w#%1110100111110000,$dff040
        clr.w   $dff042
        move.w#21+64*9,$dff058
        rts

section      fastdata,data

oldcpr dc.l   0
gfxbase          dc.l   0
old     dc.l    0
scrlpos          dc.w   0
textpos          dc.l   text
gfxlib  dc.b   "graphics.library",0
text    dc.b    "Welcome to CU Amiga!.. This is a test..... "
dc.b    "And hello from Jolyon. As you can see this "
dc.b    "is a rather silly example of how you can use "
dc.b    "the Amiga copper co-processor from machine code "
dc.b    "to do strange and disgusting things to a rather "
dc.b    "innocent scrolly text message. "
dc.b    " So.. ermm.  Nice weather, isn't it? "
dc.b    "Well, at least it was. It's not actually now, it's "
dc.b    "been raining all day. And I went to the Dentist "
dc.b    "this morning and my mouth hurts. "
dc.b     "And poor old Green at the CU Office has nearly died "
dc.b    "from worry because this article isn't ready yet. "
dc.b     " Oh, and the internal drive on my Amiga 3000 died.. "
dc.b     "and the replacement power supply for our hard drive "
dc.b     "doesn't work either. "
dc.b     "and (shameless plug time: Buy Fractal Universe, _29.95"
dc.b     " for CDTV!) that's all for today... Be Excellent to "
dc.b    "each other... "

dc.b   0

font    dc.w  $0000,$0000,$0000,$0000,$1818,$1818,$1800,$1800
        dc.w  $6c6c,$6c00,$0000,$0000,$6c6c,$fe6c,$fe6c,$6c00
        dc.w  $0c3e,$583c,$1a7c,$3000,$00c6,$cc18,$3066,$c600
        dc.w  $3386c,$3876,$dccc,$7600,$1818,$3000,$0000,$0000
        dc.w  $0c18,$3030,$3018,$0c00,$3018,$0c0c,$0c18,$3000
**
** and more font definition data
**
        dc.w  $1818,$1818,$1818,$1800,$7018,$180e,$1818,$7000
        dc.w  $62d6,$8c00,$0000,$0000,$3844,$baa2,$ba44,$3800
        dc.w  $c038,$fb4f,$00fe,$01f0,$1422,$a008,$8037,$8e10


section       chipdata,data_c
; some defines for copper commands

COL0    equ          $180
COL1    equ          $182
BPL1MOD equ          $108
BPLCON0 equ          $100
BPLCON1 equ          $102
BPLCON2 equ          $104
BPL0PTH equ          $e0
BPL0PTL equ          $e2
SPR0PTH equ          $120
SPR0PTL equ          $122

cw     equ    $FFFE    ; copper wait mask

newcpr                  dc.w          BPLCON0,$1200
                        dc.w          BPLCON1,$0
                        dc.w          BPLCON2,$a
                        dc.w          BPL1MOD,2
                        dc.w          $92,$38
                        dc.w          $94,$d0
                        dc.w          $8e,$2c81
                        dc.w          $90,$2cc1
                        dc.w          BPL0PTH
pl0h                    dc.w          0,BPL0PTL
pl0l                    dc.w          0,SPR0PTH,0,SPR0PTL,0
                        dc.w           COL0,0,COL1,$ff0
                        dc.w          $2d07,cw,COL1,$ff1
                        dc.w          $2e07,cw,COL1,$ff3
                        dc.w          $2f07,cw,COL1,$ff5
                        dc.w          $3007,cw,COL1,$ff7
                        dc.w          $3107,cw,COL1,$ff9
                        dc.w          $3207,cw,COL1,$ffb
                        dc.w          $3307,cw,COL1,$ffd
                        dc.w          $3407,cw,COL1,$fff
                        dc.w          BPL1MOD,-82
                        dc.w          $3507,cw,COL1,$ff
                        dc.w          $3607,cw,COL1,$df
                        dc.w          $3707,cw,COL1,$bf
                        dc.w          $3807,cw,COL1,$9f
                        dc.w          $3907,cw,COL1,$7f
                        dc.w          $3a07,cw,COL1,$5f
                        dc.w          $3b07,cw,COL1,$3f
                        dc.w          $3c07,cw,COL1,$1f
                        dc.w          $3d07,cw
                        dc.w          BPL1MOD,2
                        dc.w          $3e07,cw,COL1,$f01
                        dc.w          $3f07,cw,COL1,$f03
                        dc.w          $4007,cw,COL1,$f05
                        dc.w          $4107,cw,COL1,$f07
                        dc.w          $4207,cw,COL1,$f09
                        dc.w          $4307,cw,COL1,$f0b
                        dc.w          $4407,cw,COL1,$f0d
                        dc.w          $4507,cw,COL1,$f0f
                        dc.w          $4607,cw
                        dc.w          BPL1MOD,-82
                        dc.w          $4707,cw,COL1,$ff0
                        dc.w          $4807,cw,COL1,$df0
                        dc.w          $4907,cw,COL1,$bf0
                        dc.w          $4a07,cw,COL1,$9f0
                        dc.w          $4b07,cw,COL1,$7f0
                        dc.w          $4c07,cw,COL1,$5f0
                        dc.w          $4d07,cw,COL1,$3f0
                        dc.w          $4e07,cw,COL1,$1f0
                        dc.w          $4f07,cw
                        dc.w          BPL1MOD,2,COL1,$f0f
                        dc.w          $5007,cw
                        dc.w          BPL1MOD,-40,COL1,$f1f
                        dc.w          $5107,cw
                        dc.w          BPL1MOD,2,COL1,$f2f
                        dc.w          BPLCON0,$9200
                        dc.w          BPL1MOD,2
                        dc.w          $92,$58
                        dc.w          $94,$a0
                        dc.w          COL1,$cc0

                        dc.w          $6f07,cw
                        dc.w          BPL1MOD,-334
                        dc.w          COL0,$1

                        ;dc.w         $6f07,cw
                        ;dc.w         BPL1MOD,2
                        dc.w          COL0,$1
                        dc.w          $007,cw
                        dc.w          BPL1MOD,-40
                        dc.w          COL0,$2
                        dc.w          $7107,cw
                        dc.w          BPL1MOD,2
                        dc.w          COL0,$1
                        dc.w          $7207,cw
                        dc.w          BPL1MOD,-40
                        dc.w          COL0,$2
                        dc.w          $7307,cw
                        dc.w          BPL1MOD,2
                        dc.w          COL0,$2
                        dc.w          $7407,cw
                        dc.w          BPL1MOD,-40
                        dc.w          COL0,$3
                        dc.w          $7507,cw
                        dc.w          BPL1MOD,2
                        dc.w          COL0,$2,COL1,$ff1
                        dc.w          $7607,cw
                        dc.w          BPL1MOD,-40
                        dc.w          COL0,$3,COL1,$ff2
                        dc.w          $7707,cw
                        dc.w          BPL1MOD,2
                        dc.w          COL0,$3,COL1,$ff3
                        dc.w          $7807,cw
                        dc.w          BPL1MOD,-40
                        dc.w          COL0,$4,COL1,$ff4
                        dc.w          $7907,cw
                        dc.w          BPL1MOD,2
                        dc.w          COL0,$3,COL1,$ff5
                        dc.w          $7a07,cw
                        dc.w          BPL1MOD,-40
                        dc.w          COL0,$4,COL1,$ff6
                        dc.w          $7b07,cw
                        dc.w          BPL1MOD,2
                        dc.w          COL0,$4,COL1,$ff7
                        dc.w          $7c07,cw
                        dc.w          BPL1MOD,2
                        dc.w          COL0,$4,COL1,$ff9
                        dc.w          $7e07,cw
                        dc.w          BPL1MOD,-40
                        dc.w          COL0,$5,COL1,$ffa
                        dc.w          $7f07,cw
                        dc.w          BPL1MOD,2
                        dc.w          COL0,$5,COL1,$ffb
                        dc.w          $8007,cw
                        dc.w          BPL1MOD,-376
                        dc.w          $8107,cw
                        dc.w          BPLCON0,$1200
                        dc.w          BPL1MOD,-40
                        dc.w          $92,$38
                        dc.w          $94,$d0,COL1,$c55
                        dc.w          $8407,cw
                        dc.w          BPL1MOD,2
                        dc.w          $8507,cw
                        dc.w          BPL1MOD,-40
                        dc.w          $d607,cw
                        dc.w          BPL1MOD,2
                        dc.w          $d707,cw
                        dc.w          BPL1MOD,-40
                        dc.w          $dd07,cw
                        dc.w          BPL1MOD,2
                        dc.w          $de07,cw
                        dc.w          BPL1MOD,-40
                        dc.w          $e407,cw
                        dc.w          BPL1MOD,2
                        dc.w          $e507,cw
                        dc.w          BPL1MOD,-40
                        dc.w          $ffdf,cw
                        dc.w          $9c,$8010
                        dc.w          $ffff,cw      ; End copper
blankline               dcb.b  100,0
blitstart               dc.w   0
screen  dcb.b           400,$0        ; graphics memory
```

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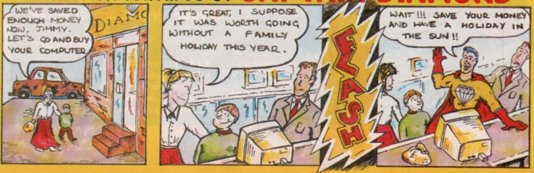
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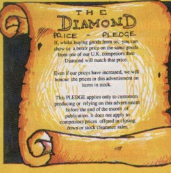

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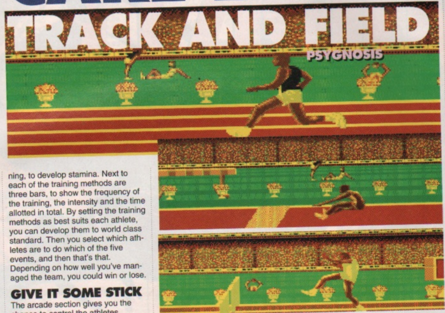
FIRST IMPRESSIONS

Unsurprisingly, Olympic-based games are starting to appear in droves, and we're here to cover those going for gold – not to mention the wealth of other forthcoming titles appearing as well.

CARL LEWIS TRACK AND FIELD

PSYGNOSIS



Teque have opted for digitised-style graphics so that the animation on the runners and assorted athletes is made smoother and more realistic. Whether this will affect the loading between events remains to be seen, but it has to be said that the Psygnosis game is stunning to look at.

Psygnosis pull on their running spikes...

TRACK RECORD

There was a point a few years ago when athletics games were all the rage. From the arcade excitement of *Hypersports* and the original joystick waggler, *Track And Field*, through Daley Thomson licenses and the Epyx Games series, the trend died out with the Commodore 64. Now, it seems, it is rearing its joystick-wrecking head again.

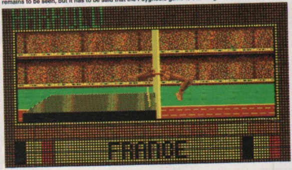
Originally titled *Quest For Gold*, *Carl Lewis' Track And Field* (*CLTF*) is an attempt on the part of developers Teque London to breathe a little bit of new life into what is essentially a tired genre. Racing your way through the main five track and field events (namely the 100m sprint, 110m hurdles, the long jump, the high jump and the javelin) you may notice the game has quite a few innovations. First off, the game is split somewhere between a simplified Goliath Games-style management title and a straight arcade game which will send your favourite joystick into hiding. It can be played in any of three ways: Managerial, Arcade, or both.

Taking it step by step, the management section has you as squad coach, with your dozen team members displayed with four statistics: agility, speed, power and stamina. Along with these, you have a dozen different training methods, all used to work on different aspects of an athlete's physique, from isometric and isotonic exercise, to develop power, through to Fartek running, to develop stamina. Next to each of the training methods are three bars, to show the frequency of the training, the intensity and the time allotted in total. By setting the training methods as best suits each athlete, you can develop them to world class standard. Then you select which athletes are to do which of the five events, and then that's that. Depending on how well you've managed the team, you could win or lose.

GIVE IT SOME STICK

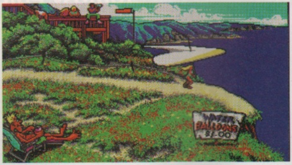
The arcade section gives you the chance to control the athletes through the motions. They will be either of average skill or the strengths you have set through training, depending on whether you went through the management phase or not. The game is played using one of two control methods. The first, speed control, hearkens back to the days when people would happily waggle their joystick as hard as they could for the world record. The other, the rhythm method (oo-err, sorry I couldn't resist that – Dep Ed!), involves pressing the firebutton in time with a swinging gauge. The first is far more gratifying, giving you the opportunity to let loose a lot more aggression than the latter, which is essentially an exercise in firebutton control.

Graphically, the game is excellent. Teque have obviously taken a few pointers from their *Pitfighter* conversion and have digitised a selection of animations for the game. What you end up with are some highly realistic looking events, a far cry from the days when small sprites with even smaller legs raced along the track. At present, *Carl Lewis Track And Field* is roughly 75% complete, with all the basic gameplay and logic up and running. Whether the addition of fancy – and admittedly stunning – graphics will add to what can be a stilted genre remains to be seen, and the competition – including revamps of the Epyx *Games* series and Empire's game – is certainly hot. However, Teque are confident that they can do it, and you'll be able to find out if their confidence is warranted in our full review next issue.



CALIFORNIA GAMES II

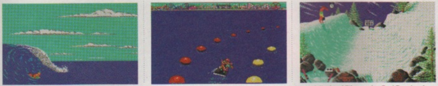
U.S. GOLD



During the frenzied waggling craze pioneered by the likes of Activision's Decathlon and Ocean's *HyperSports* and Daley Thompson licences, 8-bit owners found serenity in their sports sims courtesy of Californian developers, Epyx. Now, after an absence of over two years, Epyx are back on the scene – well, sort of. For those of you with semi-decent memories, you may recall that *California Games* was a rather spiffy ensemble of events, including half-pipe skateboarding and surfing. Now, we are all set to return to the beach as Creative Materials bring us five more zany events in the sequel.

The PC version of *California Games II* is one of the last games to appear from the Epyx stable, and wasn't originally scheduled to appear to on our beloved Amiga. Featuring such diverse events as Hang-gliding, Snow-boarding (in California!), Jet Surfing, Body Boarding, and Skateboarding, the aim once again is to outdo your 'chillin' and 'wicked' mates by 'out gnarlying' and being generally more stylish and skillful than them. The Amiga version is being handled by Paul Dunning who, in the past, coded Virgin's *Shinobi* conversion and was also part of the team responsible for Ocean's *Battlezone* clone, *Voyager*. He has been toiling on *California Games II* for four months, and the game is currently 75% complete.

So far, *California Games II* looks set to be a worthy sequel to the original, with a good variety of events to keep the player interested. The best thing about the Epyx *Games* series, though, is that there is always room for the player to improve their performance. It's the need for such skill that raises the Epyx games above the plentiful competition, and Creative are hoping that their conversion will live up to the high standards set by the likes of *Summer Games II* and *Winter Games*.



California Games II's graphics are being ported over from the PC and retouched to use the Amiga's 16-colour palette. In addition, coder, Paul Dunning, is also taking time to refine the animation to make it more fluid than that of the game's PC cousin.

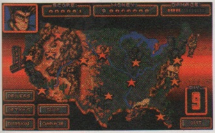
CRAZY CARS III

PALACE/TITUS

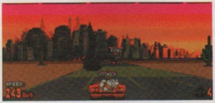
One of the first games to appear on the Amiga was Titus's dire *Crazy Cars*. Released to cash in on the *OutRun* craze which was then sweeping the country, *Crazy Cars* was a graphically-stunning but totally unplayable racer, which launched Titus in the UK. Naturally enough, a sequel followed, and whilst it was marginally more playable, *Crazy Cars II* was still far from perfect. Now, however, Titus are set to unleash the third game in the series through Palace, and it definitely looks a lot better than its predecessors.

Crazy Cars III invites the player to engage in a Cannonball Run-style illegal road race across the US states. The player is given a limited supply of funds with which to travel between states and enter each race. The price to enter each race varies between states, with the weather and opposition making particular routes especially tricky and hazardous. However, by also using your cash to add such luxuries as nitro-boosts and enhanced engine capabilities to your gleaming vehicle, the odds can be balanced out slightly.

As can be expected, the game is viewed using a third-person perspective viewpoint from behind your car, and, using a choice of automatic or manual gears, the basic aim is to be first past the line. However, as well as the other professional racers (whose cars are marked with rather conspicuous arrows), Police patrols must also be avoided. To make this latter addition a little more fair, though, the Police will also attempt to stop the other computer-controlled cars if they break the speed limit – allowing you to whizz past and sneak into the lead! At present, *Crazy Cars III* is currently 90% complete, with all the intelligence and driving routines up and working. However, still to be added is a betting screen, where the player can bet on themsleves or one of their opponents.



Crazy Cars III aims to expand upon the many car games that have been and gone. As well as adding road race and betting elements, ideas such as Police patrols have been expanded on, too.



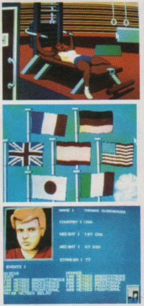
THE GAMES ESPANIA '92

OCEAN

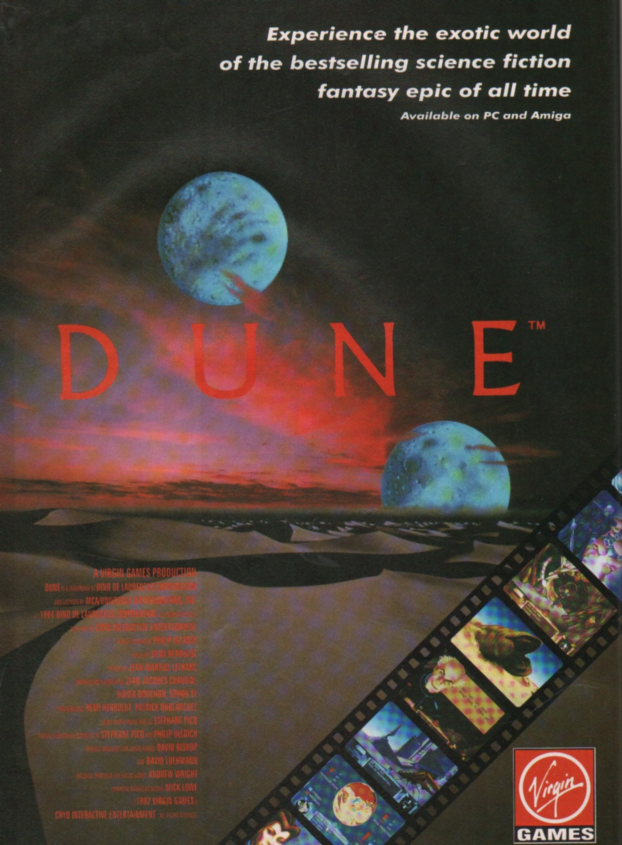
Never ones to miss a bandwagon, Mancurian giants, Ocean, are also set to cash in on the Olympics. The Games Espania '92 is once again being handled by Creative Materials (who are already busy with *Summer Games I* and *II* AND *California Games II*), but opts for more of a managerial slant than most of its competition. Featuring a massive selection of events as well as waggling like crazy as you go for gold, *Espania* also involves training and team selection among its many options.

As you prepare for the forthcoming games, the player must select and train up a series of athletes until they are in tiptop form for the events. In addition, more mundane organisation must be dealt with, too, and this involves booking into the said events. However, once the event is upon you, the expected waggling begins. Returning to the good old 'stick thrashing' method of countless others within the genre, *Espania*'s events rely on brute force and timing if good times and medals are to be attained. However, if you prefer to save your stick for another day, then the computer will perform for you – although not as well as perhaps as you could do, as the machine won't push your characters as hard as a ruthless play might!

With large sprites and a broad variety of events, *Espania '92* certainly has promise. Creative's athletic track record is certainly looking good so far, and we are hoping for a full review of the Ocean game within the next two issues.



Ocean's game opts for a slightly managerial slant, with the player training up their athletes for optimum performance.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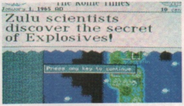
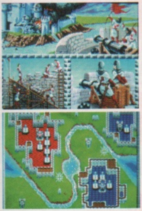

The Rome Times
January 1, 1965 AD
Zulu scientists discover the secret of Explosives!
Press any key to continue

Following its PC parent, Sid Meier's *Sim City* variant, *Civilization*, is set to hit the Amiga in a matter of weeks. Scooping awards aplenty in its original incarnation, *Civilization* starts in the year 4000BC, with the player given control over the destiny of a small nomadic tribe. From the little acorn, new members must be recruited to your tribe, and they must consequently expand across the large play area. In addition, as your party gets larger and starts building houses and cities, more gameplay elements are introduced, with the player grasping economics and eventually adding armaments and defence to their ever-gowing community – but tasks can be handed to your populace.

From their humble beginings in 4000BC, the player will pass through major historical events and can even encounter the likes of Ghengis Khan during the game! Priced at a reasonable £34.99, *Civilization* will be reviewed next issue, so keep your eyes peeled.

RAMPARTS

DOMARK

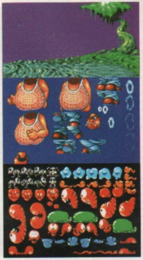


Tengen's *Ramparts* coin-op is a rather weird little machine. For the most part, it's a vertically-scrolling shoot 'em up with the player attempting to build castles and armaments before caning the computer-controlled opposition in a bout of barrages. However, as you inevitably take damage, a secondary almost *Tetris*-style puzzle element is added as you attempt to seal the gaps in your castle.

Domark's conversion is in the hands of The Kremlin. Initial reports are that it's looking very close indeed to the coin-op, and we'll be bringing you a review very soon.

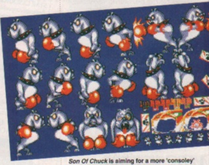
CHUCK ROCK II: SON OF CHUCK

CORE DESIGN



One of the best platformers of the last eighteen months was Core Design's *Chuck Rock*. Set in a prehistoric era, the player was out to rescue their beautiful wife, Orphelia, who had been KO'd and kidnapped by the evil Gary Gritter. However, after much rock throwing and platform leaping, Chuck eventually won through. Now, however, it is Chuck who has been kidnapped, and his baby son is out to perform the heroic rescue mission. For those of you expecting more of the same Chuck-style action, though, forget it. *Chuck II* is far more 'consoley' in style, with the game adopting a faster, more action-packed design. Armed with his trusty club, baby Chuck must quite simply bash and leap his way through the horizontally-scrolling stages, whilst simultaneously accruing as many bonus goodies as possible.

The original *Chuck* team have once again been amassed for the development chores for *Son Of Chuck*, and the game is currently entering its ninth month of development, during which time, several rethinks have been made and alterations made. However, if all goes according plan, Core hope to release the game sometime in September.



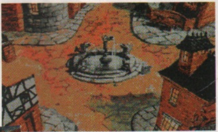
Son Of Chuck is aiming for a more 'consoley' style of game, with the original game's puzzle and platform elements giving way to a Mario-style game. That said, though, Core also have a few tricks up their sleeves which they are hoping will blow the competition away.

CURSE OF ENCHANTIA

CORE DESIGN

Starting life as *Zeloria*, a rather attractive arcade/adventure set in a mysterious land, *Curse Of Enchantia* has probably evolved more than any other Core Design game. Having conquered the racing, flight sim and arcade/adventure genres, they are now set to enter the arena once more and take on the likes of *Cruise For A Corpse* and *Another World*.

Although the graphics have changed, though, the scenario remains intact. A young lad is whisked away to the world of Enchantia whilst playing a game of Baseball. However, although Enchantia looks like your average medieval village, it is actually the place where all lost property goes – so if you've ever wondered where that other blue sock went, now you know. To escape this strange world, the player must guide their on-screen persona through *Enchantia*'s many stunning screens, before meeting and interacting with the many people and puzzles within. Details are a little woolly at the moment, but from what we've seen *Enchantia* has the graphics to rival even *Monkey Island II*. More news soon.



Enchantia makes use of the Amiga's 32-colour palette.

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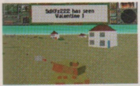
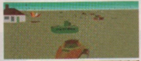
SWITCH

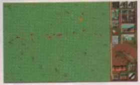
CAMPAIGN

EMPIRE

Fans of all things military will probably already be familiar with Rainbow Arts' *Conqueror.* Using the same 3D routines pioneered in David Braben's *Virus, Conqueror* was a classic little tank battle with loads to shoot and a liberal sprinkling of strategy thrown in for good measure. The game also saw the debut of 68000 coder, Johnathan Griffiths, who is now set to return to the battlefield with *Campaign.*







Using a similar 3D arena, Johnathan is again opting for a disjointed view of the proceedings, with the player viewing their tank from afar as it trundles across the smooth-scrolling landscape. Set in the last few months of the Second World War, the player has been set to make a final offensive push through a desolate East Germany in a series of missions. However, rather than limiting the player to tank warfare, *Campaign* offers no less than 100 vehicles, ranging from boats and jeeps to high-powered trucks and tank destroyers. And if that wasn't enough for the would-be Commander, there are also fifteen rather meaty guns to oversee.

As well as guiding your forces into battle, the player must also govern the necessary supplies and production to ensure that further weapon production can continue – in addition, when not ensuring that you have enough bits and bobs to weld together, there's also the battle strategy to be worked out! *Campaign* looks set to be a thoroughly absorbing sim, which hopes to combine Griffiths' stunning graphics with more in-depth gameplay along the lines of *Team Yankee. Campaign* will be released via Empire next month.

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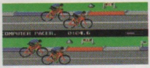
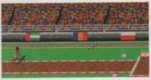
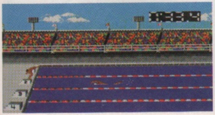
SUMMER GAMES I & II

US GOLD





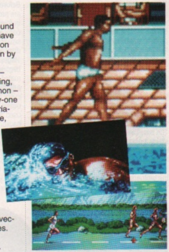
Following Ocean's lead of converting popular 8-bit games over to the Amiga, US Gold are set to release Epyx's stunning *Summer Games II* on the Amiga. Coincidentally timed to appear as the Olympics starts, Creative Materials are the busy bees behind the conversion and very smart it is looking, too. In addition, to make the collection complete, the first *Summer Games* is also nearly finished. Graphically, whilst they don't look particularly impressive, all the controls and playability of the originals has been faithfully retained. When played together, *Summer Games* and its sequel offer the player sixteen events to partake in, ranging from the relaxing blasting fun of the skeet shoot to the more taxing cycling and running events. Rather than necessitating joystick-destroying waggling, *Summer Games* requires exact positioning of the joystick and well-timed presses of the firebutton if you are to break any records.



Both games will be bundled with *California Games* in a compilation called Mega Sports, and will be released some time in June priced at £25.99.

INTERNATIONAL SPORTS CHALLENGE

EMPIRE



Lorks, with the Olympics just around the corner so to speak, Empire have joined Psygnosis and U.S. Gold on this Barcelona-bound bandwagon by announcing *International Sports Challenge.* Featuring six events – Swimming, Cycling, Show Jumping, Diving, Shooting, and the Marathon – these are further split into twenty-one sub-events, so that there are variations on each sport – for example, Swimming features relays, 100 Metre and 400 Metre races, whilst shooting offers a selection of either clay pigeon targets or boards.

Graphically, the game is looking quite nice, and the Newcastle-based coders have used large sprites for the athletes, and have also incorporated smoothly-updated vector graphics for the cycling stages. Pencilled in for a June release, expect a review extremely soon.

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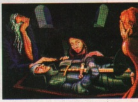
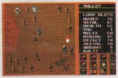
PALADIN II

IMPRESSIONS



In case you missed it, the original *Paladin* apparently won buckets of awards for its complex gameplay. Thus, if you do remember it, then no doubt you'll be cock-a-hoop to learn that a sequel is on its way from Impressions. Assuming the persona of a young Paladin called Brandon, the player must prove their bravery by trekking through the game's dangerous worlds of zombies, trolls and other such creatures, and as he does so, a series of quests will unfold. Impressions are currently taking note of faults levied at their past titles, and are currently ensuring that the game will be as good to look at as it is deep. Boasting all manner of game-enhancing features, such as digitised sound, loads of spells , and artificial intelligence for the enemy creatures, *Paladin II* will be released in June.



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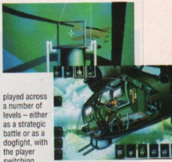
B-17

MICROPROSE



If you've seen Memphis Bell, you'll know what to expect from Microprose's collaboration with Leeds-based Vektor Graphics. For, rather than assuming the role of a heroic pilot out to dogfight with the evil Hun, the player must assume a number of positions within the plane. The B-17 was piloted by a series of gunners and pilots, and featured armaments both on top of and slung beneath its massive body. By switching between these roles, the player must engage a number of missions and take out a selection of German bases and planes whilst avoiding taking too many hits. Although this may sound rather confusing, though, *B-17* can be played across a number of levels – either as a strategic battle or as a dogfight, with the player switching between turrets and bombing doors for optimum efficiency. *B-17* looks to be one of the largest games to hail from the Vektor and Microprose stables yet.

RISKY W

Steve Keen takes a trip through EA's newest platform romp and encounters more than a few surprises in their *Risky Woods*.

OUT OF THE CUPBOARD

Every now and then, a game smashes on to our screens from out of nowhere, blazing a red hot trail through the piles of over-hyped software before it. *Risky Woods* is going to prove to be just that sort of phenomena. The majority of code was finished more than ten months ago, but for reasons best known to the Spanish programming team, Dinamic, it's taken all this time for the game to come to light.

Risky Woods is an arcade beat 'em/shoot 'em up of incredible console quality. Looking more at home on a Super Nintendo, the game's amazing array of colours and detailed backdrops put most other Amiga offerings to shame. The game's hero is a young adventure seeking warrior by the name of Rohan. His habitat, The Lost Land, is a peaceful isle that generates a great power which has been entrusted to the holy monks for safe keeping. Fortunately this scenario doesn't last long and the evil demon, Draxos, turns all the brothers into statues and scatters them throughout the world in order to exploit the guardians's power. The world contains four zones, each with two stages of combat. In every stage you must free all of the monks before time runs out.

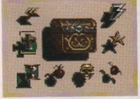
MAPPING IT OUT

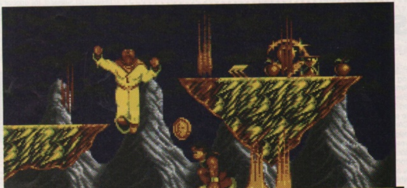
Before you commence your journey you are presented with a screen that maps out in miniature the path ahead. The whole complex that you are about to slice, smash, burn and slash your way through is displayed in minute detail, but the latter stages are kept tantalisingly out of view beyond the edge of the screen. A tiny animated version of your warrior makes purposeful strides forwards on the map every time you complete a level. From the outset you'll notice the standard of colours used. No pasty pale substitutes here. The backdrops and sprites are delivered in darkest blues and deepest reds as is the compound quality for every colour used throughout the spectrum.

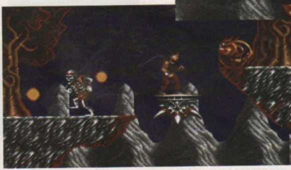
Rohan's first route is through the dense foliage of the forest. In each of the lands you are given four minutes to come out the other side, although you can gain extra time by locating a tiny hour glass which appears occasionally. The first level won't give players of any standing any real problems as it's very easy to fight through. What presents the real challenge is picking up the many extras that are needed to make it through future stages. Rohan is armed with an unlimited supply of knives which he sends hurtling towards his adversaries with incredible speed. Anything less than lightning fast reflexes and your adventure will be short lived, as the forest's skeletal warriors look like contenders for the American 4x4 relay team. Most of the monsters are content with simply running straight towards you and depleting energy from your meagre supply by suicidal touch. However, others such as the fireball spewing plants and multi-clawed bats have more advanced forms of attack.

The compact score panel is packed with information and at first glance is slightly bewildering. There are really only three things you need to look out for: time remaining, lives remaining, and keys. Other

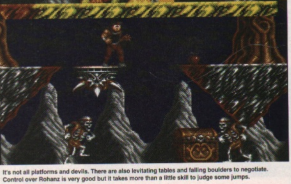
CHESTS OUT Throughout the game you'll discover loads of big wooden chests. A few blasts and they'll spring open to reveal an assortment of goodies. Various jewels, crucifixes, red lips and stars that'll pump up your points, arrows that will either do the same or back track you to an earlier stage in the level, apples and bananas that can put you to sleep thus forcing you to lose time, winged hearts that notch up three energy points and potions for six points. There are also bags of cash and even a mini Rohan who jumps out in front of you and runs off. If you catch him three times you'll get the opportunity to continue from where you left off when you die.



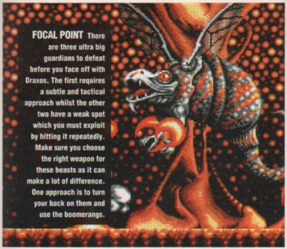




Monsters throughout the game come towards you at an unrelenting pace. It's impossible to kill them all and pick up the coins at the same time so you've got to sacrifice the wealth or health.



It's not all platforms and devils. There are also levitating tables and falling boulders to negotiate. Control over Rohanz is very good but it takes more than a little skill to judge some jumps.



FOCAL POINT There are three ultra big guardians to defeat before you face off with Draxos. The first requires a subtle and tactical approach whilst the other two have a weak spot which you must exploit by hitting it repeatedly. Make sure you choose the right weapon for these beasts as it can make a lot of difference. One approach is to turn your back on them and use the boomerangs.

information is important, but not for the initial stages. You have three lives, each divided into eleven segments, and when this health level falls out of the yellow and into the red it's a safe bet that death's just around the corner. Life can be regained in any number of ways. Most monsters you kill will drop ornate spinning coins which can be collected and used to buy extra weapons and energy at the end of a level. Alternatively You'll come across huge wooden chests that hide a multitude of power-ups and special features in a mixed bag of the good and bad. Undoubtedly the most important items to locate are the two components to the level keys. These have two functions and can either be used as a weapon, clearing everything on the screen or to provide safe passage past the huge all-seeing stone monoliths that block your path. They are invariably found in hard to reach places and on cliff edges and the like. Before you are allowed to exit a level you must crack the stone casing holding the monks. Draxos, in his infinite cunning, has put several decoy statues in the world that hide his own servants. Although they look the same as normal priests, when they smash out of their restraints they throw up a dark red fire that scorches the ground and burns your bones.

buyers guide

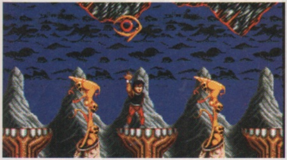
release date	**June 1992**
genre:	**shoot 'em up**
team:	**Dinamic**
controls:	**joystick**
numbers of disks:	**2**
number of players:	**1**
hard disk installable:	**No**
memory:	**512k**

MONEY TALKS

If you're to get anywhere you'll need money. The weedy knives allocated to you at the beginning are not nearly enough to see you through every stage. There are four other weapons that you can turn your hand to, all available at the Olde Shoppe that appears amidst a dazzling sign at the end of the round. On offer are ball and chains, fire, axes and boomerangs. Each has its own special properties and can aid you in different ways during combat. For instance, the axe can be thrown straight up into the air and bounce around the screen until they hit their target or disperse. No matter what the weapon is, you choose you can also buy up to three power-ups devices for them and, if you decide to change them, the difference in price will be refunded to you.

OODS

CU AMIGA SCREENSTAR



Most of the time you'll be called upon to gel around more than one problem at a time. Huge stalagmites thrust up at you whilst you hurl from platform to platform. To top it all ferocious winged beasts force you back into the chasms should you come into contact with them. Use the key for this one.

A multitude of coins, but can you stick around long enough to scoop them up?

There's no turning back from this predicament, but with the boomerang you might not need to.

Not content with the awesome power of the fire weapon Rohan has found a brand new toy.

Risky Woods is packed full of delightful game-play touches. From the multitude of humanoid and demonic monsters, all animated and coloured to perfection, to the special effects like the screen darkening when you go inside caves. The sheer beauty of its characters and the detail begs the question 'why can't all games be as good looking as this'. Every platform and pixel is a resplendent cacophony of colour and although we've seen the type before, never has it been presented with such class and attention to detail. It's a simple little game, but one that is utterly addictive.

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GRAPHICS	98%
SOUND	79%
LASTABILITY	85%
PLAYABILITY	89%

OVERALL 90%

OUT OF THIS WORLD!

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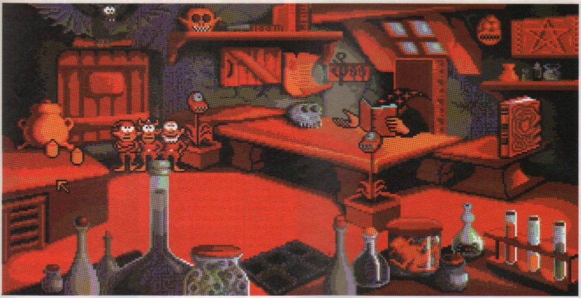
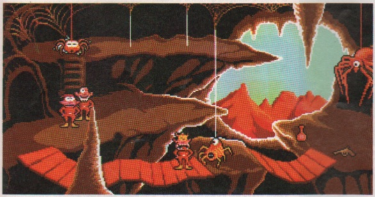


GOBLIIINS



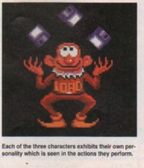
Something is afoot in Dingly-Dell. The King has gone as nutty as a king-size Snickers bar. Dan Slingsby and a trio of goblins went down to the bottom of the garden to investigate – well, that's his story...

SLEEPING BEAUTY

This sleeper of a hit was released more than a year ago in Germany and France to rave reviews, and it's a mystery why nobody bothered to import it over here. Never ones to let such a quality game escape our attention, those good folks at Digital Integration have teamed up with the title's Continental publishers, Cocktel Vision, to give us all a chance to share in the miscreant antics of three young goblins and some of the funniest animation I've seen in an Amiga game.

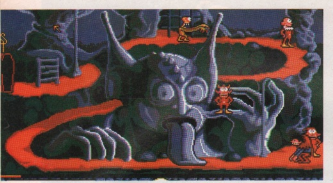
We'll forget the plot – which is some nonesense about a mad-as-a-cow King and his three loyal goblins who are sent on a quest to find a cure for his mysterious illness – and jump straight into the game. The idea is to guide the three goblins through twenty-two single-screen levels in search of four magical components which, when combined, will provide the cure to their ailing King's madness. Each level has a set task to complete. It's not immediately obvious what that task is, and some are quite off-the-wall and zany, but there are several subtle clues scattered about to help you on your way.

In a doff of the hat to Psygnosis' *Lemmings*, *Gobliiins*' three characters have their own individual abilities and strengths. Asgard is the beefy-looking

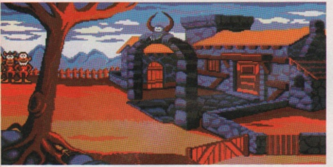


Each of the three characters exhibits their own personality which is seen in the actions they perform.

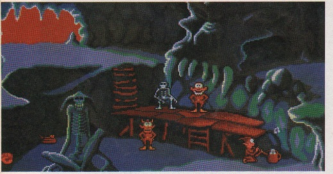
WONDERFUL WORLD On your travels, you'll meet a wide variety of characters, some of whom will offer help, while others will try and cause you as much grief as possible. Niak, the wizard, is a grouchy old so-and-so, but his wosdom can be bought with precious jewels. Other characters to look out for include Shadwin, an influential old rat, Gemellor, a two-headed dragon, and Meliagante, a very sad giant who has fallen into the deepest depression. The latter also guards a run-down castle where a secret weapon resides which can destroy all evil powers. . .



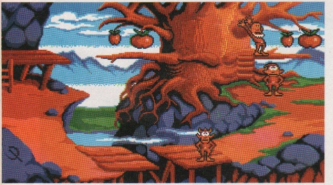
Ignatius better hurry as the zombie he's released from the coffin is about to sneak up on him. One touch from his outstretched hands will result in instant death and you'll have to start the level again.



The first screen of the game proves a tough challenge and far be it for us to make it any easier for you! Red-herrings abound and there are lots of superfluous animations to keep the player from getting bored.



Dismember the skeleton to obtain a magical flute and then it's a question of what to do with the musical instrument. Oups displays the brain-power of a slug by using the flute on a bucket instead of the snake.



The diamond mine holds a precious jewel. However, to reach the jewel means finding a way across the damaged bridge. How about using your magical abilities on the Tomato tree (?) and plugging the hole?

GOBLIIINS

one who, naturally enough, is good at hitting things and using his strength to climb up ropes. On the other hand, Ignatius is a weedy magician who can cast spells on almost anything, but cannot predict the results. Completing the trio comes Oups, sporting a stylish bobble hat atop his bonce, and who can collect and use the various objects scattered about each screen. By manipulating all three, in turn, the player has to use their individual abilities to solve the game's many puzzles, red herrings and traps.

ENERGY DRAIN

It's not as simple as that, though, as the amount of experimentation open to you and your minions is severely limited by an energy bar for each character. Fall foul of a particular trap and your energy level is rapidly eaten away. Use it all up, and one of your three characters bites the dust. Annoyingly, it's not possible to complete the entire game without all three goblins in toe, so you'll either have to start again or restart using the handy level codes released at the end of each successfully-completed stage.

Everything in the game is mouse-controlled. Placing the arrow cursor on the main screen and clicking the left button designates the spot or area for the currently-selected goblin to walk to. Clicking the right mouse button cycles through the various options open to your current character. For instance, a clenched fist indicates an action that can be performed such as, in the case of Asgard, walloping someone or bashing something. The fist also indicates where the wizard will cast his spell and on which person or spot various objects can be used. It's all incredibly straightforward, which is a shame, as some of the puzzles in the game certainly aren't.

Unlike *Lemmings*, which allowed the player to logically think through each level's slickly-designed problems, *Gobliiins* offers few clues as to what course of action to take. Admittedly, some levels give pretty big hints – for instance, one screen features a twinkling diamond sticking out of a diamond mine, so it's obvious what to do there – but even when it looks incredibly straightforward, things are far from easy. Only by constant trial and error are some of the later puzzles solved. It's not a game where you can sit down and finish it in one sitting (unless you're incredibly jammy) and you'll doubtless have to restart each level several times before you solve the intricate puzzles.

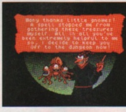
buyers guide

release date	**June 1992**
genre:	**puzzle adventure**
team:	**Cocktel Vision**
controls:	**mouse**
numbers of disks:	**3**
number of players:	**1**
hard disk installable:	**no**
memory:	**all machines**

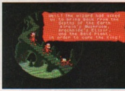
SAVING GRACE

With such a high difficulty level and so few clues, the game's saving grace comes in the form of some stunning cartoon-like animation. Each character has a vast repertoire of facial expressions and most of these are used to comic effect when things go wrong or when individual characters have been standing idle for any length of time. Some will stand on their head, pick their nose, play with a yo-yo, or countless other tricks while awaiting their turn.

Despite its slapstick humour and clever visual gags, *Gobliiins* is a little plodding at times. It takes a while for each action to be completed and, due to the bizarre nature of some of the puzzles, a player may well give up before he's taken a look at more than a third of what the game has to offer. The incidental humour might be quite jolly, but it begins to wane after a time, especially if you've tried everything and got absolutely nowhere.



Many thanks little gnomes! A spell stopped me from gathering these treasures myself. All in all you've been extremely helpful to me so, I decide to keep you. Off to the dungeon now!



Well! the wizard has asked us to bring back from the Depths of the Earth Alrain's Mushroom, Arachnide's Elixir, and the Bold Plant, in order to cure the King!

The Wizard holds the key to curing your king's madness, but he's an obstinate old fool who will only offer his help if you bring him gifts.

Gobliiins isn't the *Lemmings* beater it promised to be, but it's still a fine game. There's certainly a few brain-straining puzzles to overcome and the cartoon-like presentation and deft animation touches make for an entertaining game, but things become daunting after a while as the difficulty level rises and the clues become much more sparse.

Definitely worth a look, *Gobliiins* isn't wildly original, but it *is* a very humorous romp. And if you like your puzzle-cum-adventure games hard, then they don't come much harder than this.

DREAM FACTORY £25.99

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GRAPHICS	88%
SOUND	56%
LASTABILITY	77%
PLAYABILITY	80%

OVERALL 80%

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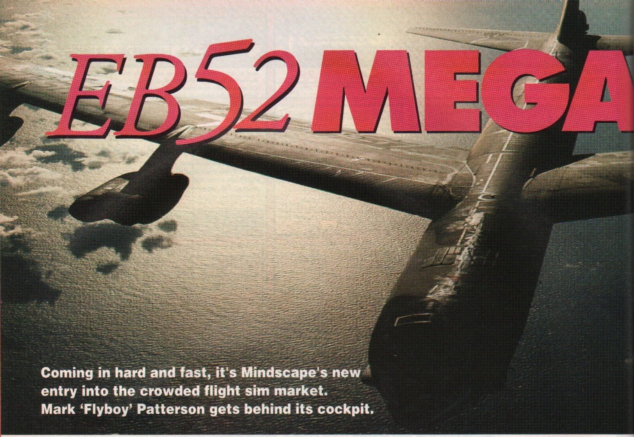
EB52 MEGA



Coming in hard and fast, it's Mindscape's new entry into the crowded flight sim market. Mark 'Flyboy' Patterson gets behind its cockpit.

THIS TIME IT'S WAR!

Amiga flight sims have covered almost every type of plane possible from the super-fast F15 to a World War I Fokker. Now it's the turn of America's deadliest war-plane, the EB52, to take to the pixel skyways of your Amiga. This awesome aircraft is the mainstay bomber of the USAF, and is capable of launching a strike – with the aid of mid-air refuelling – anywhere in the world. It requires several crew members to fly one of these beasts, but for the purpose of Mindscape's game the player fills the roles of pilot, navigator, bomber and radar man.

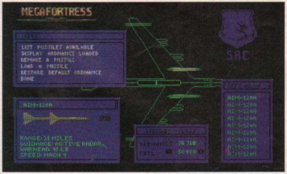
There are several screens representing each crew member's tasks. The most important is the pilot's area, where you can monitor the speed, altitude, course and other essential dials and gauges. The hands-on flying is also done from here, although the autopilot is frequently used on long journeys. The co-pilot's screen contains the controls for the eight engines, landing lights and other factors which contribute to getting the plane airborne. The navigation screen is where the course is plotted, the weapons are controlled, and, coincidentally, is where most of the action takes place.

The user-interface has been designed to accommodate the many facets of flying a plane while keeping the sim realistic. This has been achieved through a very simple point'n'click system. All you need do to raise landing gear, for instance, is click on the appropriate switch. This eliminates the stacks of keypresses found in most simulations.

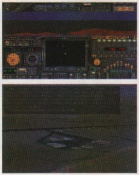
BINGO FUEL

Apart from piloting the beast, navigating is the most important role. As your fuel levels are normally calculated to give you just enough to get to your target and back, your route has to be precisely plotted. Factors such as enemy air-bases and radar sites have to be taken into account when laying in a course, and if you stray too far from your target, you may never get back in one piece. The standard method of navigation is the waypoint system. This plants a number of 'markers' (waypoints) on the map: the first of which is your air-base, the second the target, and the third your return point. Calling up information on a particular waypoint will show you its bearing, and all that remains is to steer the plane towards it. The computer always plots a basic set of waypoints for you before a mission, but the chances are you'll need to add new ones to guide you around hazards.

It's important to choose the right weapons for the mission. Some of the simpler missions require you to fly to an undefended location and drop your payload on whatever's there. In this situation, you can practice operating the targeting computer, which involves using a radar and a TV camera to pinpoint your target before a missile can target it. Slightly more tricky is guiding a missile manually, whereby some can be steered via a through-the-nose cam-



AIM-120A
RANGE: 31 MILES
GUIDANCE: ACTIVE RADAR
WARHEAD: 45 LB
SPEED: MACH 4



Despite the large number of controls, the EB52 is actually fairly easy to control.

TOOLS OF THE TRADE

The strangest weapon of the EB52 are its air-mines. The launcher is located in the tail, and is employed to take out enemy fighters which are attacking from behind. It fires a projectile which is like a rocket powered grenade. The unit's radar can track enemy planes up to thirty miles away, although the rockets only have a range of two miles. When a projectile is launched it's guided by radar towards its target, and when it gets within 200 yards it detonates, filling the air with deadly shrapnel. There are thirty missiles in total, which makes for a formidable defensive weapon.

FORTRESS

era – which proves useful if you have to change targets once the missile has been launched. Finally you can turn your hand to conventional bombing. You can drop a larger payload with free-fall bombs, but getting the plane in the right location to start an attack run, then letting go of the bombs so they hit their targets, requires a great deal of skill – and practice.

The computer usually takes a 'best guess' at the weapons you'll be needing on a mission – usually choosing a selection of air-to-ground missiles while outfitting your air-to-air defences.

buyers guide	
release date	**Out now**
genre:	**Adventure**
team:	**in-house**
controls:	**mouse, joystick**
numbers of disks:	**4**
number of players:	**1/2**
hard disk installable:	**yes**
memory:	**1Mb**

Personally, I always found it necessary to take a few extra missiles, just to make sure. Packing a number of anti-radar missiles is always a good move, too, as they are your only defence against enemy surface-to-air missile sites. If you're not equipped in this way you'll need to call up the radar screen and use the jammer. The wavelength of the signal tracking you is shown in the top part of the display, and you can either let the computer attempt to jam it or do it yourself. To make a successful jam, you have to adjust your outgoing frequency, by clicking on a pair of icons, to match the incoming one. Do this and you will be invisible to enemy radar.

BANDITS AT TEN

For all its size and power, the EB52 is quite a sluggish aircraft, and is seemingly easy prey for supersonic fighters. Early B52s had several tail-mounted cannons, but these weren't very accurate and were no match for long-range missiles. The version you're piloting, however, is tooled up with Sidewinder and AMRAAN anti-aircraft missiles and an air-mine dispenser. To launch these, you must access the weapon control screen, pick your targets (which should be the fastest of the incoming planes), wait for the word 'Lock' to flash up on the screen, and fire. Although these missiles represent state-of-the-art technology, enemy aircraft have emergency countermeasures which can decoy them. Your plane has similar systems, which work provided they're used correctly. Radar and Infrared missiles can be decoyed by chaff and flares respectively. Each burst of either of these provides two-seconds worth of decoy, and if they're launched at the right time will throw a missile off your trail and leave it without enough fuel to double back for another attempt.

FLAT BATTERIES

You'll also need to keep an eye on your power readouts as well as your fuel. The plane has four on-board AC generators which run many of the instruments such as the altimeter, navigation computer and standby hydraulic pumps. If, for some reason, one or more of these generators fail, the emergency batteries can be brought in. These have to be used sparingly, though, as they only have enough juice for twenty minutes. Lose any of these systems for good, and you'll have a hard time getting back home again.

As with most flight simulations, the graphics aren't up to much, with a few rectangular vectors representing buildings, and some very slow routines for the planes. The instrument layouts are functional, and easy to get to grips with, which is a major plus point. Initially this struck me as being a very complicated game, so it came as quite a surprise when I successfully managed to take off, bomb a target, then navigate back to base and crash-land – and all on my first go.

The point'n'click system makes it particularly easy to get into, and the quick start section in the manual covers quite a lot of ground. Apart from ease of use and the obvious realism, though, there aren't many outstanding features. There are several nice little touches which aren't essential to the game, but make it a whole lot more realistic. These include things like windscreen wipers, landing lights, and switching the engines on and off.

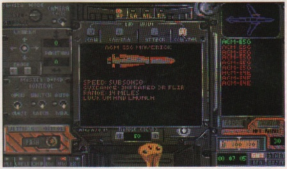
While this is an extremely realistic flight simulation, this proves a drawback. With the EB52 such a large, manoeuvrable, single role aircraft, the action tends to be rather limited. The targets are viewed almost at third hand via simulated TV cameras, and enemy aircraft are either destroyed before they get close, or come into range and wipe you out, making the game a little dull. For all its realism I prefer the faster paced sims to *Megafortress*, which just isn't busy enough for my liking.

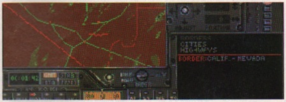
MINDSCAPE £30.99

> **"Very realistic, but lacks an action element..."**

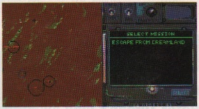
GRAPHICS	65%
SOUND	60%
LASTABILITY	76%
PLAYABILITY	69%

OVERALL 75%

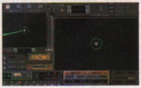

AGM 65G MAVERICK:
SPEED: SUBSONIC
GUIDANCE: INFRARED OR FLIR
RANGE: 14 MILES
LOCK ON AND LAUNCH

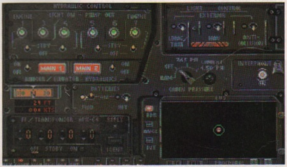

CITIES
HIGHWAYS
BORDER:CALIF. - NEVADA

Right: A wide variety of explosives and bombs are at your disposal, including surface-to-air and air-to-ground missiles. In addition, more conventional bombs are also supplied to take out key enemy installations.


SELECT MISSION
ESCAPE FROM DREAMLAND

Everything in *Megafortress* has been made to keep things as simple as possible.

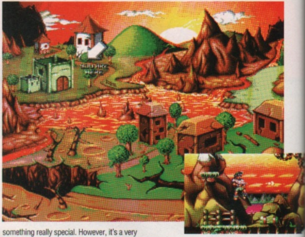

Before a mission, the computer automatically stocks up on weapons for you.



Looks complex doesn't it! Actually, although there are literally dozens of controls and switches, most only come into play if the user opts for the most difficult levels.

JIM POWER

Macho meets macho as Tony Dillon squares up to Loriciel's latest hero...



HERO QUEST

Jim Power is a shoot 'em up along the lines of *Switchblade II* and even the old fave, *Kung Fu Master*. The action consists of walking across a horizontally-scrolling backdrop, and disposing of the enemy as they appear. Point, Time, and Life bonuses can be found along the way, and Jim's considerable armaments can be enhanced, too. These bonuses are held in small pods which float in the air. When shot, they drop both bonus points and a useful add-on, which include extra lives, smart bombs or a shield – however, the latter is relatively useless and lasts mere seconds before evaporating.

There are five levels to be explored, each of which is nearly fifty screens long, and involve leaping across moving platforms and ramps and overcoming other similar obstacles. Simple as this sounds, though, the sheer number of enemy sprites thrown at you make it a frustrating and thankless task.

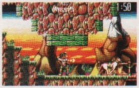
LOOKING GOOD

On playing, it soon becomes apparent that *Jim Power* plays almost as well as it looks. The joystick response to Jim is instant, and the controls great, with a real sense of devastation available from the game's many weapons. However, then it all begins to fall apart slightly. The twelve-layers of parallax, whilst smooth and convincing, is the first fault. The layer you play on (the one that holds all the sprites and platforms) is actually the second from the screen and, as a consequence, key traps can be obscured by the foreground detail.

LACKING SOMETHING

The lack of frills in *Jim Power* lets the game down quite heavily. There's no high-score table and the gameplay is very run-of-the-mill. In addition, Jim's lack of jumping prowess also means that the game requires pixel-perfect positioning if you are to survive – something that is not always possible within the game's hostile environment.

Jim Power looks like it could have been something really special. However, it's a very average arcade romp. I'd save my money for something a little more worthwhile – Gremlin's *Switchblade II* or Core Design's *Wolfchild*, for example.



buyers guide

release date	**Out Now**
genre:	**Shoot 'Em Up**
team:	**In-house**
controls:	**Joystick/Keyboard**
numbers of disks:	**2**
number of players:	**1**
hard disk installable:	**No**
memory:	**All Machines**

LORICLE £25.99

"Standard blaster with a few graphical frills..."

GRAPHICS	76%
SOUND	80%
LASTABILITY	55%
PLAYABILITY	61%

OVERALL 74%

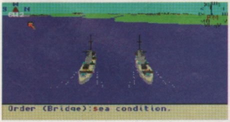
• • • • • • • • • • • • • • • • • • • •

DREADNOUGHTS

Mark Patterson plumbs new depths with Peter Turcan's long-awaited wargame.

ALL AT SEA

For those of you who want to join the armed forces, but tend to shy away from the possibilities of war, *Dreadnoughts* is for you. *Dreadnoughts* is set during the first three years of World War One, when naval power was all important. During this period, gigantic battle ships such as the Bismark and HMS Dreadnought were the respective flagships of the German and British navies. There are seven scenarios which culminate in the battle of Jutland which involved over 250 ships.



Order (Bridge):sea condition.

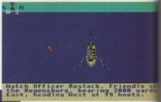
SENTENCE STRUCTURE

Most conventional wargames rely on icons, or single key-presses to issue orders. But this, like the other Turcan games, uses a system more familiar to adventure games. Commands are issued through sentences. There are several key words to issue orders, plus a directive so the computer knows who you're talking to. For instance, if you wanted to take a look at a battle cruiser, you'd type in 'Look At Invincible'. You can also look at it from another point of view by typing 'Look At (name of ship) From (name of ship)'. The rest of the in-game commands use this simple method, but there's quite a time delay between question and answer in order to simulate the poor guys who have to translate the spotlight signal into words, and the commander of the other ship to formulate his reply. The command system has no trouble dealing with complicated instructions either. In one sentence you can tell a member of your fleet to sail to a certain location, shell anything they find there, then scuttle. It's this versatility that makes this potentially complicated game playable.

THIRD DIMENSION

The 3D graphics are another outstanding feature of *Dreadnoughts*. They make viewing a battle easier than the rows of little icons that make up most wargames. What really stands out is the amazing technical accuracy of the game. The ships are described in detail, and there's a chart showing the damage potential of the weapons.

Although this game is designed to be accessible, it's still very heavy going – it took me ages to get into it. While the control system is easy to understand, keeping track of units and following the battle is a real test of strategy skills. As good as it is – and there's no doubting that Turcan knows his stuff – *Dreadnoughts* is definitely one for strategy fans only.



Watch Officer Rostock. Friendly sh
the Regensburg, bearing 2000 yards
East, heading West at 15 knots.

buyers guide

release date	**Out Now**
genre:	**Strategy**
team:	**Dr Peter Turcan**
controls:	**Keyboard**
numbers of disks:	**1**
number of players:	**1**
hard disk installable:	**yes**
memory:	**All Machines**

TRS £34.95

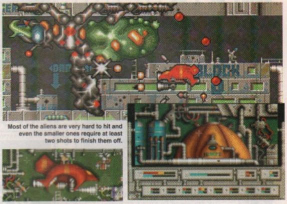
"Extremely detailed and deep wargame..."

GRAPHICS	75%
SOUND	45%
LASTABILITY	71%
PLAYABILITY	81%

OVERALL 75%

HOSTILE BREED

A game full of bugs? Surely not! Steve Keen is here to investigate...



Most of the aliens are very hard to hit and even the smaller ones require at least two shots to finish them off.

DIVERSE CREATIONS

A lone research station set deep in the sulphurous swamps of the planet Genaro is totally unaware of the seething metamorphosing plant and insect life-forms outside. Completely sealed off from the hostile environment, the last thing the research crew needed was an earthquake – but that's exactly what they got. Now, with the aliens breaking in and progressing through the eight-legged base's wings, the surviving scientists have shut themselves in the control centre and set about repelling the unwanted guests and filling the cracks in the base's hull. However, there's only one attack craft left, so the task of expelling the mutants is left to you.

At its most base level, *Hostile Breed* is a shoot 'em up. As in countless others, you must pilot the craft along each of the eight wings until you encounter the point at which the aliens have broken in and blast them. This is not as easy as it sounds, though, as the assorted aliens have individual life cycles consisting of roughly five evolutionary stages. The strategic manoeuvres are performed from the control centre, and this is where *Hostile Breed* raises itself above other shoot 'em ups. The earthquake has weakened the complex's nuclear reactor which is responsible for powering the whole station. Each wing consumes a certain amount of energy and you can't make use of their special features without shutting down key areas to provide the extra power. Your ship is extremely slow, too, so it's necessary to connect yourself to the overhead electric rail to get anywhere fast. This, plus the corridor's lighting, is all the basic supply provides. More extravagant uses of power include the corridor defences, complete with guns and electrical barriers.

Due to the lack of power, a happy medium must be found between using the base's armaments and the attack craft's arsenal. In addition, there are useful items to be retrieved from landing docks throughout the station, but entry to these necessitates a power battery and the completion of a sliding puzzle. Following this, you then return to the weapons bay to fit your new goodies.

buyers guide

release date	**june 1992**
genre:	**shoot 'em up**
team:	**Palace**
controls:	**joystick**
numbers of disks:	**2**
number of players:	**1**
hard disk installable:	**no**
memory:	**any machine**

PRODUCTION LINE

The different bays on the main screen are vital to winning the game, which is going to take some time. Probably the most important is the Robot Manufacturing Bay which produces and dispatches the four different types of droids needed to make repairs. From time to time, the overhead rail will be broken and you'll need to send the specific robot to go and fix it – whilst others mend electrical wires or structural damage. However, these droids may be attacked whilst you're busy on another level – but a handy light indicates when this is happening. The robot under attack will automatically put up a shield for two minutes before its battery runs out and it's destroyed.

Frustratingly exciting is the best way to describe *Hostile Breed*. Its innovation and adaptation of an old theme helps sustain the game's appeal. Admittedly, the main sprite's appearance is a little off-putting and its control leaves much to be desired. People may also be put off by the game's difficulty level which is quite hard, but then you wouldn't want to complete the game in under a week, would you?!

There are lots of nice touches throughout the game, such as the *Defender*-like hyper-rail for fast movement along the corridors, and a lot of thought has gone into the design. Nice one!

PALACE £25.99

“Interesting slant on the shoot 'em up theme. . . ”

GRAPHICS	80%
SOUND	70%
LASTABILITY	81%
PLAYABILITY	78%

OVERALL 77%

* * *

LEGEND

Hardened adventurer, Tony Gill, wonders if *Legend* will live up to its name...

A NEW VIEW

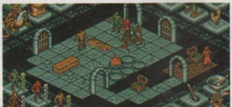
Legend uses an Isometric perspective, giving the player an overall picture of the surroundings and the chance to independently control each of the four-man team. Initially, the player is given four heroic characters: a Wizard, a Bard, a Fighter and an Assassin. In the beginning, there are very few options available to the party, but their names, gender and abilities can be altered at this stage – albeit at a very simplistic level.

Open the door to an adjoining room, and you'll just have time to take a peek at the bad guys within before the rumble begins. The magical bolts hurled by the combatants are shown fizzing their way across the screen to explode in a ball of flame – unlike the boring alternative offered by the likes of *HeroQuest*.

BATTLE WEARY

Combat is played in real-time with the player given control over each of your men. Fighters tend to look after themselves, but your wizard will require precise moves when aiming and casting spells. As with other games of this ilk, you will find many magical items and weapons left scattered around the many dungeons, including mystical spells. The manual which comes with the game is deliberately vague when it comes to listing all possible spell combinations, and instead encourages you to experiment with the magical ingredients.

Legend's action takes place across a number of areas, both above and below ground. A map of the play area can be displayed at any time, and it is over this that your merry band travel between strongholds using conveniently-located horses. A constant battle is running across this map between the forces of Good and Evil and you must be careful in the initial stages not to bump into the forces of darkness or it will be lights out for you.



Although the isometric viewpoint makes *Legend* look arcade-based, it is infact one of the more thought-provoking RPGs of late.

buyers guide

release date	**April 1992**
genre:	**RPG**
team:	**Tag/Pete James**
controls:	**mouse, joystick**
numbers of disks:	**2**
number of players:	**1**
hard disk installable:	**no**
memory:	**any machine**

ON THE TOWN

Upon the arrival at each stronghold you can visit the usual array of Taverns, Guilds, Shops and Temples to buy health and goodies with money made killing monsters. In addition, the dungeons are littered with old chests stuffed with scrolls, keys and potions.

Your team are nicely animated, and the dungeons are similarly well illustrated. Initially, I must admit that I wasn't a fan of *Legend*'s arcade-style adventuring. However, brilliant additional touches, such as the spell mixing and the realistic combat sequences soon won me over.

MINDSCAPE £25.99

“A role playing game with the emphasis on fun. . . ”

GRAPHICS	81%
SOUND	80%
LASTABILITY	84%
PLAYABILITY	83%

OVERALL 83%

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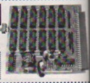

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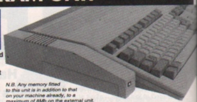

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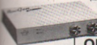

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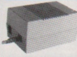

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With napsack strapped to his back, and a bickering party of adventurers at his side, Tony Dillon enters Silmarils' sequel to *Crystals Of Arborea*...

ISHAR

LEGEND *of the* FORTRESS

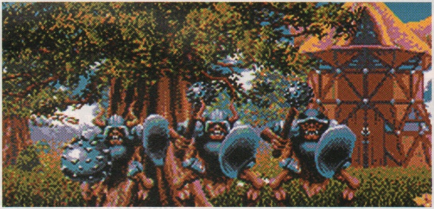
IT'S STORY TIME...

If you remember playing Silmarils' earlier game, *Crystals Of Arborea*, you'll already know the story of how Jarel, the Prince Of Elves, overthrew the evil Morgoth and became ruler of Arborea, now known as Kendoria. However, since then Jarel has died in a bizarre hunting accident – one of those things the authorities thought was best left unsolved – and many came to the land and tried to take his place. An evil lord by the name of Krogh succeeded, and now rules from his castle in Ishar, a place of evil power. You assume the role of an average citizen sent out to liberate the country and defeat the evil lord. All in a day's work, eh?

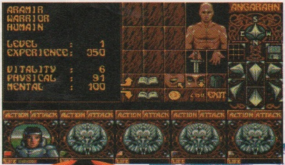
You begin the game alone in the middle of nowhere. The only person in sight is some mad guy standing by a tree who recommends a nearby pub. You don't know where you are, what you are supposed to do, or anything come to that, so a good pint down the pub sounds a good idea.

WHERE AM I?

Discovery and exploration are the keys to *Ishar*. The plot is a complex beast which unveils itself as you progress, occasionally throwing you off balance with the odd puzzle or totally unexpected occurance. As you move from one point in the story to the next, you will discover more and more clues, until you feel like part of some violent detective story set in a mythical wood. Lost and clueless in the middle of nowhere may not sound like fun, but it actually fires the imagination and kickstarts the plot. The first thing you'll notice as you explore the attractive lands of *Ishar* are the stunning graphics used to depict the area. There are 40,000 locations, with each screen offering a further four viewpoints for each compass point, giving a total of 160,000 different views in the game – all of which are perfectly drawn. Depths and distances are portrayed correctly, as is the scaling of objects, and the effect generated by walking for-



Above: Here are some of the typical villains and ruffians roaming through the forests and villages. These guys obviously object to your particular type of haircut.

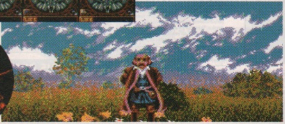


ARAMIR
WARRIOR
HUMAIN

LEVEL : 1
EXPERIENCE: 350

VITALITY : 6
PHYSICAL : 91
MENTAL : 100

Left: The inventory. The nine squares represent the nine objects you can carry at any one time. To move objects, drag them from one point to another.



Below: One of the friendlier characters in the game. This thief is the first person you meet, and happily tells you where the nearest pub is. Don't bother recruiting him, though. Thieves can't be trusted.

ward is convincing and true.

Ishar is the sort of role-playing game fanatics will die for. I don't know about anyone else, but for an RPG to work for me, I have to feel that I am actually part of the adventure, not an onlooker with a remote overview of the proceedings. Everything is viewed through a first person perspective, and the graphics enhance the feeling of really being there. However, it's all the things you can't initially see that make this game stand out. For a start, there's the overall depth of everything. Each character is completely different, and as you recruit your merry band, you'll realise how helpful it is to keep a varied bunch. Different strengths and weakness in different tasks and skills help round your team, and the different classes of characters open new doors when problem solving.

ALL FRIENDS TOGETHER

The way your party members get along is very important. This is the first time I've ever seen such an intelligent human element in a game like this. Each member of your party develops affiliations and relationships with the other members of your party, and all have a say in the actions you try to carry out. For example, your band of four may meet a very talented, but extremely untrustworthy thief. You want to take the risk of him stealing all your party's possesions while you sleep because you think recruiting his talents is probably worth it. In any other game of this type, you could just recruit who you liked. However, in this case the system is a little more democratic. The rest of your party vote against recruiting the thief as they just don't like him, so he doesn't join. In doing this, you are made to feel that your party is indeed a real collection of people.

Characters also get involved with NPCs (Non Player Characters). In one sub-plot, a father asks you to rescue his daughter in return for which he will give you a key. You find and rescue his daughter, but on the way back she falls in love with a male member of the squad. When the time comes to deliver the girl, she won't go without her lover, and he won't leave the party, so the only thing to do is kill him. On killing him, someone else in the party who became good friends with him turns against you. It's complex, but no more complicated than real life.

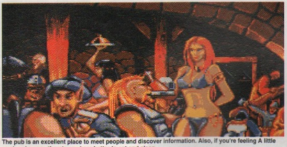
A large part of the game involves picking up clues from one person as to the whereabouts of another. Again, it's the detective story element. The game is completely mouse controlled, with the faces of your team members at the bottom of the screen displaying individual status and information screens, as well as the now standard cluster of arrows for movement.

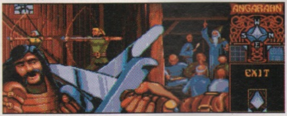
Clicking on one of the two buttons above the characters' faces lets you into a new world of interactivity. 'Attack' prompts the team to battle any enemy currently on screen and clicking on 'Action' opens a sub-menu, from which you can perform all the character functions, including hiring and firing, picking locks, checking your orientation (displayed as your position in location to key areas), or using magic.

A REAL SPELLBOOK

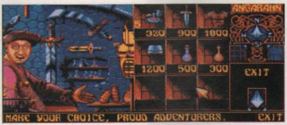
Magic in *Ishar* is far more than clicking on a scroll and watching the effect. A character begins with few spells, if any, and has to enrole on magic courses to learn more. In addition, they have to be used correctly – magic missiles have to be aimed, for example. Not only are there thirty-five different spells (ranging from standards, such as healing and fireballs, to new spells where you can completely confuse your enemy and even turn your party into gas clouds), there's also the ability to create spells of your own. In the manual there is a list of different compounds to be mixed, the effects of which you'll have to discover for yourself.

The sheer size of *Ishar* means that you'll be playing it for weeks, possibly months, to come. It's the best game of its type I've ever seen, and is obviously highly recommended.


The pub is an excellent place to meet people and discover information. Also, if you're feeling A little weak or hungry, there's nowhere better to eat and sleep.

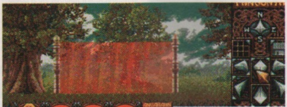


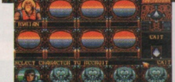
Fancy taking a degree course in extreme violence? These classes improve the fighting capabilities of your party, necessary later on in the game.



MAKE YOUR CHOICE, PROUD ADVENTURERS.

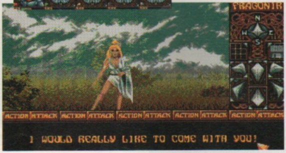
Shops offer all manner of goods, from suits of armour to apples, all at extortionate prices. At least the salesman's friendly...





Top: Hidden in the forest is a useful teleport, but you'll have to search really hard for it.

Left & Below: Recruiting can be done in two ways. Either you'll meet someone at a pub and ask them, or they will approach you. Who could resist this offer?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I WOULD REALLY LIKE TO COME WITH YOU!

CU AMIGA SCREENSTAR

COMBAT Combat in *Ishar* is run via a very complicated system, which you actually proves very easy in practice. All you have to do is repeatedly click on an icon marked 'Attack'. This signals for that particular character to take a shot at the enemy. How well you do is based on a few pointers, though. Obviously, the weapon you are using has a large effect, as does your overall experience. Also taken into cosideration are the character's skill in using their currently held weapon, plus his or her physical positioning in the group (characters at the back can only use ranged weapons, such as arrows). The enemies strength and fighting skills also change the result. Amazing really, when all you get to see is a splash of red and a number telling you how much damage you have inflicted.

buyers guide

release date	**July 1992**
genre:	**RPG**
team:	**Silmarils**
controls:	**Mouse**
numbers of disks:	**2**
number of players:	**1**
hard disk installable:	**Yes**
memory:	**All machines**

SILMARILS £29.99

“Stylish and absorbing RPG – highly recommended...”

GRAPHICS	91%
SOUND	78%
LASTABILITY	88%
PLAYABILITY	87%

OVERALL 89%

SENSIBLE

Steve Keen pulls on his shin pads for a kickaround with Sensible Software's footy game.

KING OF THE CROP?

Roughly two years ago a game was released which gripped the Amiga games-playing public like no other before. Journalists fell over themselves to find new adjectives with which to describe its gameplay, and it flew straight in at the number one slot on every games chart across the board. That game was *Kick Off 2* and, even today, if you ask most hardened games players which game they'd take onto a desert island with them, any one of the *Kick Off* duo would be their resounding reply.

However, this scenario is a bit misleading as *Kick Off 2* wasn't without its dissenters. Many criticised its numerable 'bugs' whilst others simply couldn't find a way of controlling the players or the set free kicks and corners. Some even went as far as to say that the entire game was unplayable. This is where *Sensible Soccer* comes in. The programmers make no secret that they had played Anco's classic to death before embarking on their own ultra-improved football game.

NEW PRETENDER

Sensible Soccer is without doubt the most refreshing and playable representation of our national sport today. Although the players look like *Mega-lo-Mania* sprites in Adidas kits, new routines have been incorporated to separate the game from its *Kick Off* competition. Playability isn't the only improvement, though. The disk contains no less than nine different tournaments and 98 individual league and national sides to choose from. If you don't like what's included, you can also create your own teams or customise the existing ones, by altering the design of their home and away kits or even the colour of their hair.

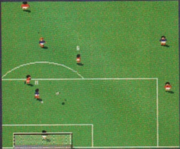
Manufacturing your Aryan race is quick and simple, but hardly necessary unless you really get into the game. All amendments made can be saved to a separate disk and used later. Every major tournament can be adapted, too. Anything up to twenty teams will form a league, and a choice of extra time and penalty shoot outs in the cup matches can be selected, and you can even adopt the away goal rule of one point for a home goal and two for an away one.

Each side consists of sixteen players, a physio and a coach. What's unique about *Sensible Soccer*, though, is that every player has the correct name and plays the appropriate position for his team. They even have the right hair colour for easy recognition. Substitutes are brought into play by waggling the joystick from side to side when the ball's been punted to the side lines. This produces a bench which appears at

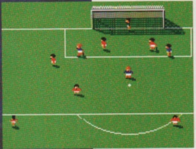
INSTANT REPLAY **The game features a novel match highlights feature. The computer automatically saves all the goals scored during a match into its memory and every replay you decide to capture by pressing R. At the end of the game, you can then play them back to your heart's content and revel in your 'Brazilian Brilliance'.**

buyers guide

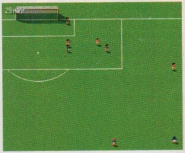
release date	**June 1992**
genre:	**Arcade Football**
team:	**Sensible Software**
controls:	**joystick**
numbers of disks:	**2**
number of players:	**2**
hard disk installable:	**No**
memory:	**all machines**



Even from way outside the area some spectacular efforts will defeat the keeper. Pull back in the opposite direction to chip the ball.



One of the hardest aspects of the game. Lift them high and curl 'em.



One of the rare occasions that the time remaining is displayed. Goals scored, times and the player's name are displayed at the end.

SOCCER

IN ALL WEATHERS Matches can be played over the period of a year and, depending what season you start in, the weather will be adjusted accordingly. You can play on muddy, normal, soft, water-logged, dry, parched or even icy surfaces and all will have a direct effect on the ball's speed and reaction to touch.

the edge of the screen and lets you select from the additional players or to send on the man with the 'magic' sponge.

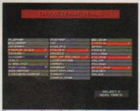
PLAYING PERFECTION

Sensible's pitch opts for the almost customary overhead view, and more is displayed onscreen than in, say, *Kick Off* and its sequel. This means that there's no need for an obtrusive scanner in the corner, and it also allows for some rather amazing mid-field play with teams passing the ball quickly and accurately before punching the ball through the defence for an attack on goal. The sprites are small, but very effective with some great animation – in particular for the sliding tackles. The abundance of shots means that nine times out of ten you'll find a man with the long curling ball and the combinations of build ups and attacks are plentiful. There's nothing more satisfying than a five pass build up beginning in your own half, before smacking a long ball down the wing and skimming a curler between the goalie and the near post. Spectacular goals are frequent thanks to the diverse controls. When not in possession of the ball, a player can slide in one direction and, by quickly moving the joystick another way, redirect the ball as soon as he makes contact. Short stabs on the firebutton give soft, ground level passes while keeping your finger held down produces a long punt. Move the stick in alternate directions or combinations and you'll be rewarded with lobs, chips, volleys, headers, trick shots and, of course, banana shot. The nicest thing about this, though, is that it all seems so natural and instinctive.

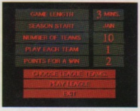
This system also means that free kicks and corners can be taken with pin-point accuracy without the need for complex joystick manipulation. Simply play the ball as you think it should be played during a normal game and you'll be amazed at the results. Curling a ball around a five man wall and into the top right hand corner will become as natural as stuffing a low, hard cross into the onion bag with a glancing header.

DRAWBACKS

The game is not without its faults, though. The maximum time for a match is a mere ten minutes, and there isn't a clock displayed during play, so you have to wait for the ball to go off the pitch before it reappears.

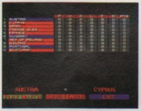


Here you can choose the teams in your group as well as who's being human or computer-controlled.

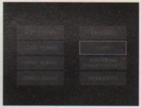


GAME LENGTH 3 MINS.
SEASON START JAN
NUMBER OF TEAMS 10
PLAY EACH TEAM 1
POINTS FOR A WIN 2

You can squeeze so much out of *Sensible Soccer*, but there's no substitute for human competition.



Every tournament you compete in comes with its own quota of tables to keep tabs on progression



This is where it all begins. Customisation of the matches is as simple as making a single click.

This throws up another hitch as the time displayed is not real-time, but a calculated representation and percentage of the full ninety minutes played in a real game. Therefore during some matches one minute of actual play is more than nine minutes on the clock.

Sensible Soccer is an incredibly enjoyable and playable game. You won't find a more controllable footy sim anywhere at this time. It capitalises on *Kick Off 2*'s shortcomings and exploits everything that made the Anco game a success. The pinball aspect of the genre is totally eradicated and the simple running up and down the pitch from goal to goal tactic made rare by the constant desire for you to test out new moves and set pieces. Within the CU office, we at trouble deciding which is the best Footy game. I'm sold on this, but Steve Merrett still insists that *Kick off II* and Rage's *Striker* are better. There's no doubting that all three are excellent, but I reckon that this is the pick of the bunch.

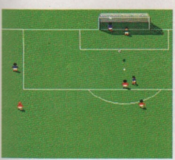
RENEGADE £25.99

“Dust off your Pumas for this Footy sensation... ”

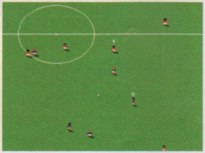
GRAPHICS	85%
SOUND	86%
LASTABILITY	90%
PLAYABILITY	92%

OVERALL 91%

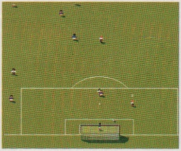
SOUNDING OUT One thing lacking in most Footy games is the atmosphere generated by a live crowd. In an attempt to recreate the sense of 'being there' the Sensible lads have devoted a whole disk to crowd sounds and noises. These vary from match to match and depend on the team you're playing. A Caribbean side's fans will have the sound of drums emanating from their speakers, whilst others will set of firecrackers and chat the old favourite such as 'ere we go, 'ere we go' and 'You'll never walk alone'.



The nearest player to the ball will always seize control. You'll know who he is by the number which appears above his head.



A dead ball in the middle of the pitch. Our money's on number 10 to get there first, but with a sliding kick anything can happen.



Penalties hardly ever occur when playing against the computer so grasp every opportunity you can to shoot, you might be lucky.

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GRAFTGOLD Creative Software

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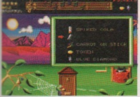
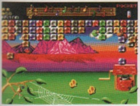
WIZKID

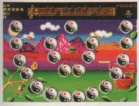
Just because you're called Sensible Software it doesn't mean you've got to put out boring games. Steve Keen looks at the slaptick sequel to the legendary *Wizball.*



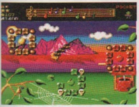
The puzzle section leaves little to the imagination. Now, where could you place a paper?



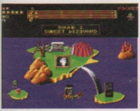
Make good use of the clown's nose by bouncing the blocks off your head onto the critters.



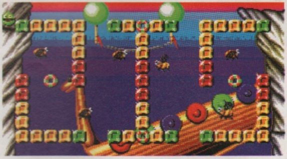
This is about the closest you'll get to a spiritual experience whilst playing *Wizkid*!



It's surprising how quickly you run out of bricks so make sure everyone counts.



Every stage must be completed to collect the minimum number of cats and reach the last island where a surprise is in store!



Every stage may look simple, but rest assured there's more here than meets the eye.

LONG TIME COMING

It's been five years since *Wizball* was thrust on to the games-playing world. The original was praised for its addictivity and playability, and even today it still holds up well against recent releases. Unfortunately, though, Sensible never wrote the Amiga version of *Wizball*, and as a consequence the conversion – whilst still playable – wasn't all it could have been. With a totally revised gamestyle, Sensible Software hope to put that right with their sequel, *Wizkid*, and amalgamate the old with the new for a modern day classic.

Wizard, Wizball, and Nifta the Cat have been imprisoned in the turtle dungeon somewhere on Wiz Island. Fortunately, their recent offspring, Wizkid, escaped and, recruiting the player as his co-pilot, embarks on a mission to rescue them. There are nine levels to play through on Wiz Island, and each accommodates two different styles of gameplay: arcade and puzzle. It is possible to finish the entire game without touching on the puzzle element at all, but it isn't half as rewarding.

ALTERNATIVE ACTION

The arcade sections consist of five insect-infested screens. Taking control of a disembodied head, the basic idea is to clear the area's rogue creatures by knocking a multitude of blocks and other objects into them. There are only a limited number of blocks which can be used, though, so a little thought is needed when aiming your shots. The projectiles hang in mid-air and, once touched, will fly off in all directions (*Breakout*-style), eradicating everything they touch. If you use up all the blocks and there are still monsters left, though, you'll pass on to the next screen and must return for another crack later. On the other hand, should you clear the waves, you will be rewarded with a liberal smattering of bouncing coins which must be collected before they disappear – and this is often more frustrating than the game itself!

buyers guide	
release date	**July 1992**
genre:	**Arcade**
team:	**Sensible Software**
controls:	**joystick**
numbers of disks:	**2**
number of players:	**1**
hard disk installable:	**No**
memory:	**512k**

SUB ROUTES **Puzzle solving is very rewarding as most actions are a catalyst for a piece of animation. Failure to finish a title screen will present you with the option to win some extra money in a Scrabble contest with the computer. Here, you must place a series of given words on the board and lock them together. There's only twenty seconds to do it in, and some of the words just don't seem to want to link together!**

From time to time, bubbles containing musical notes appear and float around the screen. These are thrown whenever an alien is killed, and, when collected, add to a music score located at the top of the screen. When all the colours and spaces have been filled on the sheet, a tune plays and the notes rain down exploding into golden coins. Other globules contain chompers which let Wizkid grab an object and throw it accurately at a nasty. Some hide a clown's red nose which allows the hero to bounce falling blocks off of his head and direct it towards a target. With a little skill and practice you can wipe out an entire screen with a single block, as it rebounds all around and comes back to you for another shot.

After the downpour of coins, a shop menu appears. Initially, such items as a carrot on a stick, a newspaper and a flying scarf seem useless to your quest, when they are actually vital to the completion of the game. Also included in the menu are the 'Head' and 'Body' icons. The head is strictly reserved for the arcade sequences, but the body opens up a new element to the gameplay. With this command, Wizkid is made completely mobile and can explore and interact with the screens he can normally only fly around. The secret of success here is one of trial and error and complete vigilance. As Wiz walks slowly around the screen, your attention could be drawn towards, say, a flashing bulb which appears in the top right-hand corner. This indicates there's something to be done at this location. For an action to take place you'll invariably need one of the objects from the shop. If you haven't got the required piece, you can reenter the shop by summoning the shop balloon. Simply hold down the fire button and catch it as it drifts above you. Surprisingly, the element of discovery has not been included and when you reach a part of the game necessitating an object, the computer automatically selects the correct item removing any aspect of trial and error.

YOUNG AT HEART

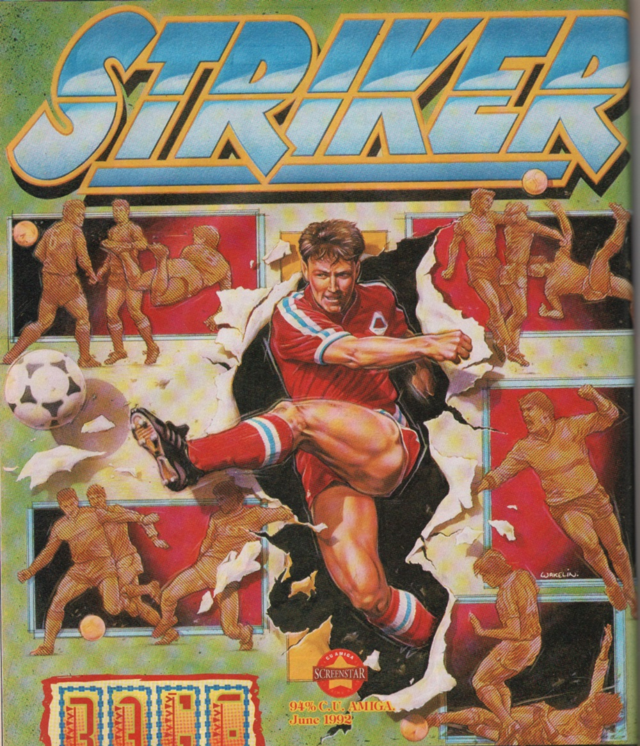
Overall *Wizkid* gives the impression of a game aimed at the younger player – there's even a tutorial given by a snail at the beginning to show you how to play. The graphics are attractive and exceedingly colourful, but pretty simplistic. However, it's in the gameplay department where *Wizkid* excels. The difference in style and presentation that Sensible have opted for with the game works extremely well. With all the different paths and sub-games included, it's possible to spend hours enjoying one aspect of the game before discovering another part is just as much fun. A good entertaining game with plenty of surprises.

OCEAN £25.99

"A colourful and fast-moving arcade game. . . "

GRAPHICS	84%
SOUND	77%
LASTABILITY	81%
PLAYABILITY	83%

OVERALL 81%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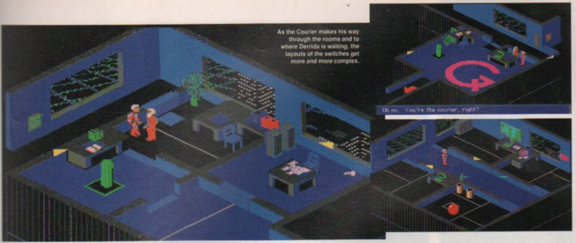
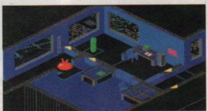


As the Courier makes his way through the rooms and to where Derrida is waiting, the layouts of the switches get more and more complex.

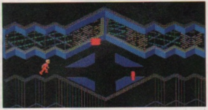
Oh no. You're the courier, right?

D/GENERATION

In a world of genetic engineering, Mindscape's latest casts the player as a courier. Tony Dillon bodily goes where no man has gone before...



Dotted throughout the building's eighty floors are a smattering of office workers. As you wander up and down the towerblock, these unfortunates must be rescued from the ever-present mutants. On freeing them, they then display their gratitude by waving or shaking your hand.



GENE GENIE

Synthetically-created mutations are a common sight on the secretive top floors of the Genoq company building. First came the A/Generation, a group of intelligent bouncing balls, and then came the springy poles known as the B/Generation. The C/Generation were a little more clever. Humanoid in initial state, they could evolve into any shape they wished. No one knows very much about the D/Generation. However, as the hero of the piece, you have been summoned to get a very urgent parcel to the man responsible for the NeoGen breedings, and from what you can tell, things have gone awry.

On arriving at the building, you are greeted with the news that nobody knows what is going on, what the parcel is for, or why the entire building is in disarray. The hardened courier that you are, nothing is going to stop you getting your parcel to its rightful recipient, so into the game you go – and what a game!

USING YOUR BRAIN **The later rooms are a lot harder to work through than you would first think. A lot of them involve firing a laser bolt through a gap in the wall, where it will rebound onto a switch, hopefully opening a door in front of you. The only real problem with bouncing laser bolts off walls is the risk of hitting things you don't want them to – switches that cut off your escape route, for example, or the hostages you are supposed to be rescuing. Thankfully though, you can't be hurt by your own bolts.**

D/Generation is an arcade/puzzle crossover, viewed in the same sort of forced 3D isometric view originated by Ultimate all those years ago. Split over 120 rooms, the aim of the game is to get through all ten floors and reach the guy your package is designated for: one Jean-Paul Derrida, a Russian expert in the NeoGen field. Along the way, though, your delivery mission entails sealing each room, destroying the genetic mutations which have overrun them, whilst also rescuing the trapped office workers and avoiding being killed by the advanced, but faulty, security system. The latter takes the form of anything from an electrified floor tile to laser cannons.

DECEPTIVE APPEARANCES

At first glance, *D/Generation* looks like an out-and-out blaster, where your mission is simply to shoot all the aliens and progress to the next room. Before long, though, you'll realise that there's a lot of strategy involved when plotting your course through each room. The offices are semi open plan, with dividers breaking up the expansive areas, some of which contain electronic doors which are opened by pressing the relevant switch. However, the switches are rarely near the door they relate to, and opening the wrong one at the wrong time can have disastrous results – switching on a security device or letting a mutation into the room where an office worker is trapped, for instance. Initially, the rooms are deceptively easy to complete, and you'll find yourself working up a couple of floors in no time. But then things start to get really difficult. Some doors need a special key, and the mutations have a habit of hitting switches, too.

Visually, the game is very basic, with a simple black background offsetting a primarily monochrome display. The animation is excellent, though, with stacks of nice touches. Some office workers will give you a little wave before dashing to safety whilst others shake your hand when you meet them. One slight gripe, though, is the pause between screens. Whenever you enter a new screen, the game freezes for a moment, which proves a little irritating. That aside though, *D/Generation* is one hell of a game. There's enough of a challenge, both for the trigger-happy and the intellectual, to make you want to play it to the end. However, that means a lot of lost sleep.

buyers guide

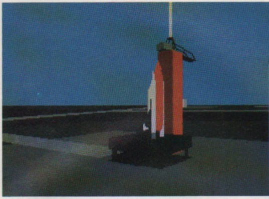
release date	**Out Now**
genre:	**July 1992**
team:	**Robert Cook**
controls:	**Arcade/Strategy**
numbers of disks:	**2**
number of players:	**1**
hard disk installable:	**No**
memory:	**Any Machine**

MINDSCAPE £25.99

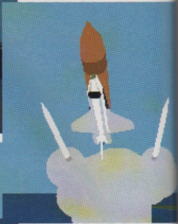
“A very addictive arcade puzzler. A lot of fun...”

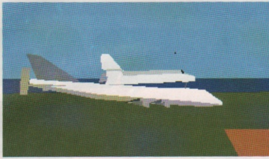
GRAPHICS	79%
SOUND	71%
LASTABILITY	87%
PLAYABILITY	81%

OVERALL 80%



With so much information crammed into the Amiga's limited memory, an unfortunate side-effect is that *Shuttle*'s graphics are a little slow and jerky – they're still visually impressive, though.





SHUTTLE

Virgin's major new simulator paves the way for Tony Dillon to boldly recite cliches which no man has recited before...

UP, UP AND AWAY!

Spaceflight simulators are rather thin on the ground. How many can you think of? *UFO* from SubLogic perhaps, or *Apollo* from Accolade? That's about it, I'm afraid, and neither of them were very exciting. The problem is that space flight might be an exciting subject for a an arcade blast but full-blown simulations are just too complex to pull off.

Shuttle is a full, hands-on simulation of NASA missions flown in their pride and joy – the world's first reusable manned space craft. It's been more than two years in the making and, to be honest, I don't think anyone is particularly bothered about the *Shuttle* now anyway – when was the last time you saw live coverage of one being launched? It's simply not on the agenda thesedays. Despite a possible lack of interest, though, Virgin's new game is an incredible achievement – both technically and in terms of content.

A BIG FUTURE

As Pilot and Commander of the Shuttle, your task is to work your way through the ten missions laid out by NASA, ranging from simply landing the Shuttle when launched from the back of a Boeing 747, to repairing satellites and a full instrument landing. These are supposed to range from easy to hard but, to be honest, you'll be lucky if you can get into the cockpit inside the first few hours of playing.

The program is a FULL simulation, unlike most titles (i.e. *Thunderhawk, Falcon, Knights of the Sky*, et al) whereby all you really need to do is point the craft in the right direction, apply a little thrust and off you go in perfectly controlled flight. This is more in the Sublogic vein, where even the tiniest move can be critical, and the smallest miscalculation possibly fatal. The way the craft responds is apparently perfect, so even landing from a

HISTORY OF THE SHUTTLE

Between April 12 1981 and January 28 1986, the four Space Shuttle orbiters were flown twenty-five times collectively. Not only was the shuttle a revolution in that it was the first reusable space craft, but the launch of Columbia with its two man crew also marked the first time solid fuel rockets were used for a manned launch. In fact, the shuttle continued to prove itself a success, despite numerous delays surrounding each launch. In fact, it only ever lifted off on scheduled launch time once, on June 27th 1982. The fact that faults were found for almost every launch should have been a warning to everybody.

It wasn't, and on the 25th shuttle flight, The Challenger shuttle lifted from the pad and dramatically exploded 1 minute and 13 seconds later, killing the seven crew. The flight had been delayed six times previously due to technical faults and bad weather. The future of the costly shuttle programme has hung in the balance ever since.

small altitude at a low speed is difficult for the first few (dozen) tries. Compare landing the plane in *Afterburner* to docking in *Elite* without a docking computer to see what I mean.

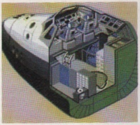
An A1 poster displays all the shuttle cockpit controls, and two manuals, one with over 140 pages, detail everything you could possibly need to know about the shuttle's complex and extensive controls. The instrument panel is enormous, spread all around the pilot, and the only way to truly represent it is to split it into six panels, each one nine times the size of the screen. Only the main ones have keyboard equivalents, so just learning how to control the bird can take a day or two.

LOOKING AROUND

Such complex controls do not make for an easy game. For instance, when coming in to land, searching frantically for the right control button amongst the hundreds of options isn't going to make your life as a pilot very easy, and more often than not the craft will smash into the ground before you're even looking in the right direction. This is where the key commands come into it, but don't think for a moment that these are going to make things any easier. There are 104 different key commands listed in the manual, ranging from the very simple F10 for external view through to Control+G+A to ready the landing gear and Control+G+D to lower it. By mixing key presses with the shift, alternate and control keys, you can run the entire simulation, but who's going to remember so many different combinations to make the sim worthwhile?

buyers guide

release date	**July 1992**
genre:	**Simulation**
team:	**Vektor Grafix**
controls:	**m–j–k**
numbers of disks:	**2**
number of players:	**1**
hard disk installable:	**yes**
memory:	**1Mb**



Before you can start to pilot the colossal beast, it's wise to familiarise yourself with every section.

But ease of use isn't what this kind of simulation is about. If you want things easy, play *Afterburner*. This is for the aspiring professional, and although I may have already said a lot of things to put you off, the simulation itself is nothing short of excellent. The attention to detail and realism is staggering. For example, probably the first thing anyone will want to do when loading up this game is watch a launch. Launching isn't easy (is anything in this game?), so thankfully there's a built-in running demo which takes you through a complete mission, just to show you how it all works. From the launch pad, you can watch the shuttle lift, release the booster rockets (which fall away leaving trails of smoke – a nice touch), fly into orbit complete with stars, release a satellite and then return to good old Mother Earth.

Trying to do the same yourself would be suicide, so the missions are designed to ease you into your new role as a shuttle pilot. The first few missions let you try your hand at launching and landing, and once mastered, you can try positioning and repairing the Hubble telescope, or a full instrument flight, where you fly completely by cockpit information.

By way of a helping hand, there are a variety of autopilots you can use, ranging from no help at all to a feature which finds all the controls you need to use next and highlights them ready for use. Rather than guarantee you instant success, though, these help options are more useful if used as a teaching aid, showing you how to go about things yourself.

CHOICE CONTROLS

If you're the sort of person who likes options, then this is the game for you. The main menu has nearly forty options, from setting up the game graphic details to viewing the various parts of the ship, and the in-game menu has over a hundred, letting you jump to any part of the cockpit or choose from a multitude of external views, which range from any point around the craft to looking at different parts of the game world.

And so we come down to the graphics, one of the most important aspects of the game. I have to say I was disappointed initially with the polygons used. Everything looks over-simplified, although not so much as to render objects unrecognisable. What really lets the game down, though, is the speed. Although the real-life shuttle is very fast, on screen it looks in danger of being overtaken by a reversing Lada. The rest of the game looks great, though. The controls panels are perfectly drawn, and the view into the payload bay is a little spooky, especially when seen in space.

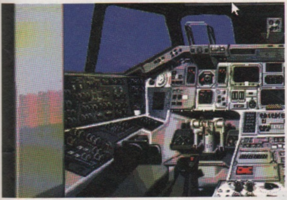
All things considered, *Shuttle* is a very balanced game. On the plus side, it is an excellent simulation, and it's rare we see so much detail and effort put into this sort of game. On the downside, it no doubt will be a closed door to most people. It's just too hard to get to grips with unless you are completely dedicated to the game. It takes a lot of effort – which does pay off – but I can still only recommend it to enthusiasts.

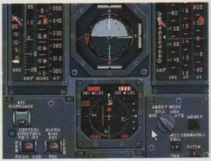
VIRGIN £29.99

> **The first sim you'll need a pilot's licence to fly...**

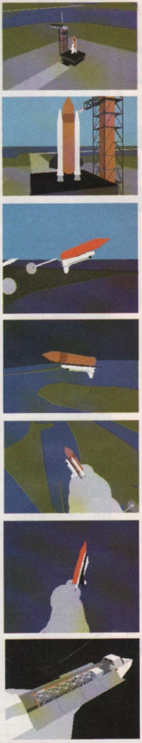
GRAPHICS	80%
SOUND	61%
LASTABILITY	89%
PLAYABILITY	73%

OVERALL 75%





Piloting the Shuttle involves the mastery of the vessel's mahy controls. Such is the enormity of the task, though, that the game has to ease the player into each section by adding a few extra controls at a time. The supplied control sheet detailing the many functions covers a massive A1-sized poster!



As the Shuttle pulls slowly away from the pad and duly discards its smoking fuel jets it's hard not to be impressed.

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Would-be NATO Commander, Steve Merrett, is here to pick up the pieces in Mirage's massive adventure...

ASHES OF EMPIRE

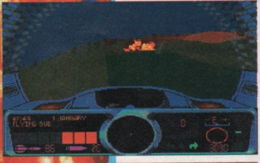
ASHES TO ASHES

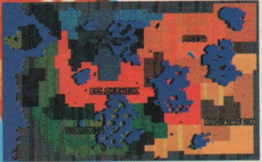
Ashes Of Empire draws its name from the chaos currently reigning within its scenario. Set within a sprawling area of five collapsed republics, as a NATO Commander you have been given the responsibility of restoring peace and stability to this turbulent land. However, the populace of each area must be cajoled into believing your cause, and with only a handful of armies at your disposal your best bet is to start in a small village and expand from there.

RECRUITMENT DRIVE

As can be expected, *Ashes* is every bit as technically stunning as we have come to expect from the Maelstrom stable, and utilises all the best in vectors and fractals to depict its play areas and maps. As impressive as these look, though, it is the complex gameplay which makes the game so different. Within each of the republics, a hierarchy of Presidents and Governors exists. These, and their assorted menial nurses and engineers, prove to be the key to your efforts and must be recruited to join your team. This is effected via a rather simplistic icon-based system, and as your power grows, so will your ability to recruit the more powerful leaders at the top of the hierarchy. However, initially, you must seduce, trick, or even bash would-be allies into submissions. As dull as this sounds, from here your army and options grow, and rescuing the collapsed Nations from themselves can begin. In addition, further areas can be recruited by supplying food or desperately needed objects. The trouble is that, with its very basic communication system and bartering methods, this section is at odds with the complex and deep gameplay – somehow it just doesn't seem right.

GETTING TO GRIPS **Such is the enormity of *Ashes'* task, that it is best to break the gameplay into small batches, and solve them individually. Initially, this involves recruiting a few more members and adding a few valuable resources to your limited supplies. This is effected by using either charm, bribery or brute force on the people you meet, before amassing enough recruits to start tempting the all-powerful Presidents and other leaders to your cause. From here, you can then intensify your efforts across a wider range, and – nuclear war permitting – the five republics may be put back on an even keel.**





buyers guide

release date	**July 1992**
genre:	**Adventure**
team:	**Maelstrom**
controls:	**mouse, joystick**
numbers of disks:	**3**
number of players:	**1**
hard disk installable:	**yes**
memory:	**Any machine**

Above left: **A number of vehicles are at your disposal, ranging from weird flying crafts to sumarines. All are armed with a range of missiles and offensive capabilities, but obviously the enemy are going to retaliate if you attack them.**

Left: **The state of unrest in an area is related to the different colours. A green area is fairly quiet and amiable, whereas the red areas are in serious trouble indeed.**

GETTING AROUND

Moving between areas and towns can either be via an airlift (supplies permitting) or by using one of the twenty vehicles the game has on offer. These range from weird airships to submarines, and allow the player to roam all over the countryside. They are all armed, too, just in case any renegade factions decide to take a pop at you. Also, it's noticeable that Maelstrom have added sprites to their 3D routines, and the forests which are dotted around the play area are all shown in their full bushy glory, adding more depth to the play field.

There's so much to see and do in *Ashes Of Empire* that it's hard not to be impressed. If you cut your teeth on *Midwinter*, then this is your next logical step. Personally, I think that *Ashes* far outstrips Maelstrom's previous games in terms of game task and content, but I can't help feeling that a revised appearance for the 3D scenes would have made it even better. As good as the 3D sections are, it tends to weaken the excellent overall strategy bent – as does the character interaction sequences. However, despite these weak links, *Ashes Of Empire* is another deserved hit for Mike Singleton's Maelstrom and an excellent release from newcomers, Mirage.

MIRAGE £34.99

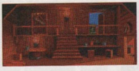
❛ Looks familiar, but this is stunning stuff... ❜

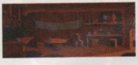
GRAPHICS	79%
SOUND	81%
LASTABILITY	89%
PLAYABILITY	82%

OVERALL 81%

Pulling on his green tights, Rik Haynes joins Ocean in Never-Never Land...

HOOK

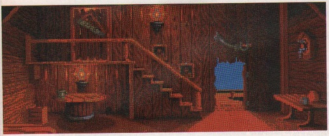




BY HOOK OR BY CROOK

Those of us with kids or young relatives have probably had their belly full of Hook, the blockbusting movie from Steven Spielberg and Sony. Updating the JM Barrie masterpiece, Peter Pan, in typical Hollywood style, this wholesome slice of American schmaltz certainly made its mark over the Easter holidays. And, after very little hype, here's Ocean's tie-in.

Closely following the movie's plot, this game is Ocean's first stab at producing a new generation graphic adventure with fancy graphics, goofy puzzles and a slick point 'n' click interface. Taking the role of Peter Pan, the player must rescue his children from the grasp of dastardly Captain Hook. Before this tear-jerking event can occur, though, Pan must regain his faith in the magical powers of youth and lose some of the flab. If he gets stuck attempting to solve a problem, striking up a conversation with any characters nearby normally provides a handy clue. Apart from that, try using your brain – it's not that hard a job to complete.

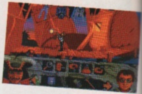


LACKS FINESSE

Sadly, despite aspiring to the heights achieved by *Monkey Island*, *Hook* has none of the finesse of rival productions from Virgin Games and Delphine. Whilst slightly above average, the scenery artwork and sprite animation certainly fall far short of something like *LeChuck's Revenge* or *Cruise For A Corpse*. Elements of *Monkey Island* were bound to creep in. On that note, Peter Pan certainly strides along like the main character from the world's most popular graphic adventure. On a more positive observation, the interface is quick and easy to use and some neat sound effects have been blended into the background.

If there was ever a good time to shove a game through the Ocean 'movie license construction kit', *Hook* is that release. The film's over-the-top storyline and special effects scream out for a bit of platform action across Neverland, arcade swordfights with Captain Hook and his band of pirates, and perhaps a flying section with Tinkerbell. It's a surprising mistake really, considering the Manchester powerhouse's usual knack of producing the right game for the right license.

Exactly who will pick up on this game, I'm not sure.Fans of *Monkey Island* will be extremely disappointed with this poor offering. It's nowhere near sophisticated or witty enough for fans of the genre and far too complicated for the average six-year-old.



buyers guide

release date	**out now**
genre:	**graphic adventure**
team:	**in-house**
controls:	**mouse**
numbers of disks:	**3**
number of players:	**1**
hard disk installable:	**no**
memory:	**1Mb**

OCEAN £25.99

‘A very poor relation to Lucasfilm's *Monkey Island*’

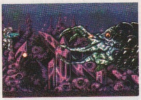
GRAPHICS	77%
SOUND	73%
LASTABILITY	25%
PLAYABILITY	64%

OVERALL 64%

• • • • • • • • • • • • • • • • • • • •

STARUSH

UBIsoft go back to basics with an alien-blasting shoot 'em up. Dan Slingsby hits 'em were it hurts.



FUN FUN FUN

Hey, this is fun. I'd forgotten what a good laugh a simple little blaster like this could be. Your task is to guide a small android sprite across a horizontally scrolling playfield, wreaking as much havoc as possible as you go. There are four levels to contest, each packed with a wild assortment of reptilian nasties and strange blob-like spheres, as well as three Boss aliens per level. The excuse for all the pyrotechnics and alien slaughter is the usual alien invasion and the imminent destruction of the universe stuff. Apparently, alien forces, based on the twelve signs of the Zodiac, are responsible for disrupting the universe's gravitational field and, thus, have to be blasted into protoplasmic slime.

Each level is based on a particular theme. For instance, the first world is a mixture of volcanic activity and frozen wastelands while the second world is a combination of jungle vegetation and underground caves. The last two worlds are made up of classic Grecian architecture and aquatic stages. All manner of nasties lie in wait, the majority of them following set attack patterns, while others vary their formations to prove more troublesome.

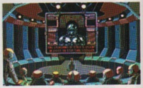
ADVANCED WEAPONS

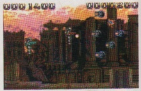
To help combat these creatures, your advanced tactical weapons system (ie. the spindly little sprite under your control) can be upgraded with the help of an anti-grav jet-pack, a scooter, an assault platform and a heavily fortified alloy bubble. All help increase your sprite's manoeuvrability and protection, as well as increasing your firepower. To increase your arsenal still further, there are also a variety of power-ups dotted around each level, the most powerful filling the entire screen with a deathly shower of golden stars.

There's nothing amazing about *Starush*, but it is immensely playable. No need for complex instructions, hefty manuals or the like, just pick up your joystick and play. Each level is graphically different and throws up a mean selection of alien hordes to slaughter. There's also a two player option so you can blast away in tandem with a friend, which adds to the fun and carnage. Don't worry about getting stuck on a level and not seeing the rest of the game (ala *Project X*), as you can pick and choose which level to play. If anything, the game is a little too easy in parts, but the levels are certainly huge. The scrolling is especially smooth and once you've completed one stage, the scrolling reverses and you have to do it all over again. *Starush* isn't wildly original or innovative, but it *is* a very entertaining and competent blast.

buyers guide

release date	**June**
genre:	**shoot 'em up**
team:	**In-house**
controls:	**joystick**
numbers of disks:	**2**
number of players:	**1/2**
hard disk installable:	**no**
memory:	**all machines**





UBI SOFT £25.99

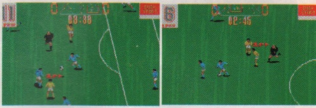
‘Competent blaster that's immensely playable’

GRAPHICS	79%
SOUND	75%
LASTABILITY	69%
PLAYABILITY	87%

OVERALL 79%

Rik Haynes enters Europe as part of Domark's rather violent line-up...

EUROPEAN FOOTBALL CHAMP



'ERE WE GO (AGAIN)

Never ones to miss out on a good marketing opportunity, countless software publishers are flooding the market with Soccer games to coincide with this year's feircely fought European championship. This is Domark's offering. It's only claim to fame, apart from originally being a tame Taito arcade game, is that *European Football Champ* is brimming over in extraneous on-pitch violence. Provided the fat old referee doesn't see your players do it, they can get away with illegal sliding tackles, punches and jump kicks. Apart from that spark of 'genius', though, there's nothing particularly special about the game. It plays better than some and looks worse than others. I don't expect Dino Dini will be making any drastic changes to *Kick Off 3* in order to counter this low level of competition, though.

PORKY PLAYERS

In the days of Rage's *Striker* and *Sensible Soccer*, isn't the old horizontally scrolling footie game way past its prime? Worst of all, there's this toady little close-up sequence in *European Football Champ*, which, in a very crude interpretation of the coin-op's fine performance, zooms into the successful striker as he runs in front of the adoring crowd of spectators. Except you can no longer see them and the pixels definitely need to attend a meeting of Weight Watchers and slim down. A rather tame Europop soundtrack and the odd spot effect make up the feeble audio contribution.

With so many soccer sims entering the fray, end of review football cliches are coming thicker and faster than ever before. So, I'll try asking one simple question instead. Why on earth did Domark bother releasing this poor effort? Comparing this to,say, Sensi Soccer is like comparing Grimsby to Brazil! *European Football Champ*? More like chump if you ask me.

buyers guide

release date	**out now**
genre:	**arcade soccer game**
team:	**Teque**
controls:	**joystick**
numbers of disks:	**1**
number of players:	**1/2**
hard disk installable:	**no**
memory:	**All machines**

DOMARK £25.99

' Poor conversion of a playable coin-op. . . '

GRAPHICS	64%
SOUND	38%
LASTABILITY	47%
PLAYABILITY	69%

OVERALL 56%

• •

COOL CROC TWINS

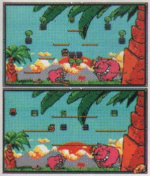
Steve Keen takes a snappy look at Arcade Masters' newest baby.

NEW BREED

Cool Croc Twins is Arcade Masters' first product and features two unlikely heroes in the shape of Funk and Punk, the crocodile brothers. The scaley duo have both fallen for the same girl, the beautiful Crockette Daisy, who can't decide which croc she likes the most, and runs off in her confusion. The two brothers set off in hot pursuit to proclaim their love and hopefully win her affections. This is not going to be easy, not only is the girl playing hard to get, but she's chosen a rather perilous route to tread. Choosing one of the two you must dodge your way through the sixty platform levels and bring her home.

TRIP THE LIGHT FANTASTIC

Each screen incorporates a series of lights which must be illuminated before you can progress to the next. The chosen Croc must walk around the edges of the screen and tumble across the playfield in order to bump into the blocks and light them up. The task is made harder by the wandering nasties that hound your actions and stick to patrolling the most accessible spots for tumbling onto the lights. Their can be up to fifteen of these on screen at once, making it almost impossible to find anywhere safe to tread.



There are six worlds in all, and each has a different theme from jungle forests, complete with pink elephant backdrops to a cattle farming ranch in the deep South.

The sprites that patrol the platforms and walls are suitably adapted to the scenario and, although their basic mission to kill you doesn't alter, their appearance does. Along with these, the added features of ice blocks, doors, brick walls and directional arrows which only allow you to pass through one way makes for some drastic and frustrating gameplay as you career off at different angles trying to clear the screen. If you're lucky enough to catch a nastie in mid-flight, the blighter will be squished and will throw up a letter. Collecting these will give you an assortment of extra help including freeze game, multiple-lighting capabilities and neutralise special blocks. Splatter all the pests and you'll get a chance to catch the extra life token.

Although the worlds are colourful and sprites smooth and detailed at it's best *Cool Croc Twins* is a very average game for the just below average gamer. Its saving grace is the simultaneous two-player option where some fine battles can be had racing toward the last light with a friend, it's just a pity

buyers guide

release date	**June 1992**
genre:	**Platform game**
team:	**Chameleon**
controls:	**joystick**
numbers of disks:	**1**
number of players:	**1/2**
hard disk installable:	**No**
memory:	**All machines**

ARCADE MASTERS £25.99

' Cute and colourful arcade experience lacking punch '

GRAPHICS	52%
SOUND	58%
LASTABILITY	60%
PLAYABILITY	68%

OVERALL 60%

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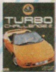
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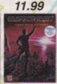
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Loads of cheats and plenty of tips are what you'll always find within the Helpline. If you're stuck on a game, or that end-of-level baddie just won't give in, don't give up and banish the game to your cupboard. Drop us a line and we'll help you out!

ENQUIRIES

SCOOBY AND SCRAPPY DOO

This is a great little game, but it's a bit too difficult. I can get to level six but no further. A level skip or an infinite lives cheat would be most appreciated.
Graham Evans, Poole, Y1

LAST NINJA 2 AND 3

I think these two games are brilliant, but I'm in big trouble. I need a cheat for infinite lives for both, or I will most certainly go mad.
Ulf Engum, Italy, Y2

CAR-VUP

Can somebody please give me a cheat for infinite lives. I've been given a couple before but none of them seem to work.
Richard Lowe, Crewe, Y3

RAINBOW ISLANDS

I can do very well in this game until I come into contact with Dracula, the end-of-level baddie on Monster Island. Can anyone tell me how to defeat the big bully or has a cheat for infinite lives?
Louise Chipps, Hants, Y4

FINAL FIGHT

Can someone tell me how to get past the really tough Samurai character? He keeps beating me no matter how much energy I have or how many lives I have left. Please help before I tug the rest of my hair out!
Charles Forest, Derby, Y5

AGONY

Yes, and I'm in it! I really like this weird little blaster, but have come up against a major stumbling block I cannot pass. The owl may be a swift and powerful nocturnal predator, but he can't withstand as much damage as I'd like. Please, will someone send me a cheat or my beast may never hunt rodents through the glades again.
Paul Glenister, Grimsby, Y6

HOW TO USE HELPLINE

It's easy. Just send in your letter, marking your envelope with the appropriate code number if you are sending a response or mark it 'Enquiry' if you need some help. Post your letters to: HELPLINE, CU AMIGA, PRIORY COURT, 30-32 FARRINGDON LANE, LONDON, EC1R 3AU.

DEATHBRINGER

This game has got my goat more than any other I can think of. I know the sword begins to take control over your player when his energy's getting low, but what's his excuse at the beginning of the game? Can someone provide me with infinite lives so that I don't take my own?
Trevor Holton, Barnsley, Y7

GOLD OF THE AZTECS

Please give me a cheat for this game. It's been stuck in my collection for years and it still drives me crazy with its infuriating game play. I really need infinite enrgy, but anything will do.
Hugh Borg, Sweden, Y8

HARLEQUIN

This game really frustrates me. The factory level with its conveyer belts and swirling snake is extremely. I would really like to know a cheat that would help me get through to the next level.
Karen Samson, Devon, Y9

KICK OFF 2

How the heck are you supposed to score a goal from a free kick or corner? I've had this game for over a year and still can't do it unless I shut my eyes and pray for a bit of inspiration. If Steve Screech, the programmer, is out there perhaps he could tell me what to do?
Paul Bland, Glasgow, Y10

MIDNIGHT RESISTANCE

One of the best two-player games in the whole world, this game is worth its weight in barbecued beef Hula Hoops. However, the latter stages are proving rather hard. How can you progress after the fighter planes once you've lost your weapons?
Mark Dome and Justin Garwood, Y11

THE ADDAMS FAMILY

I'm exploring the inside of the furnace in the kitchen, and I've come to a dead-end. After opening the furnace and making my way to the right once inside, I've come up against a wall with a platform passing through a really small gap. I've tried standing on the platform to get through it, but the wall hits me as the platform passes through the gap, and I am left facing the wall. Can anyone help me with this? I've tried flicking all the switches I can find, but none of them seem to help. Please write in, I'm tearing my hair out and starting to resemble Uncle Fester. If not, I'll settle for a nice infinite lives cheat so that I don't have to keep restarting when I lose all my lives.
Dave Reid, Horley, Y12

OUTRUN EUROPA

As far as dangerous James Bond-style spies go, I'm afraid that I'm a bit of a loser so far. I can get past the first stage, but the boat stage is really starting to get on my nerves. The enemy keep stopping me from reaching the checkpoint, and I get banged away before I can retaliate. Has any one out there got a cheat for infinite lives or a level skip? Or even one to turn the sprite detection off?
Ian Haining, Norwood, Y13

RESPONSES

TEST DRIVE T13

Start the game as usual and hold down the firebutton, Alt and C for infinite lives. Also, holding down the firebutton, Alt, and L allows you to access any of the levels at any time. Don't activate both cheats at the same time, though, or you won't be able to get any further or pass level 2.
Simon Kent, Poynton

DOGS OF WAR T19

Before you start, type TIMBO then press F5 for infinite lives. Pressing F5 again turns the cheat off.
Steven Porter, Lancs

ROBOCOD U8

Play the game as normal and then type THE LITTLE MERMAID. Pressing assorted keys will then produce varying effects.
Nicholas Bellingham, Southampton

FUTURE WARS U9

It's not hard to get past the sewer monster. Firstly, return to the first city screen and find the blowtorch to the right-hand side of the screen under the pile of rub-

ble. Go down into the sewer and you should find a gas tap on one of the walls. Use the blowtorch on the tap and it will replenish the torch. Finally, go to the monster and use the blowtorch on him. Be careful, though, because if you go too near he will kill you.
Jonathan du Bois, London

4D SPORTS BOXING W15

When training put a lot of emphasis on strength. Keep your finger on the fire button and advance towards your opponent very quickly. When fighting an amazing thing happens and you'll notice that you can now beat all comers. You're now better than Mike Tyson.
Arnold Hornet, London

PRINCE OF PERSIA X1

Nothing could be as simple as defeating your own mirror image. Simply re-sheath your sword and skip past the vagabond. You can't possibly beat yourself so don't bother fighting with him. If anyone wants the cheat to skip levels just hold down Caps Lock and L simultaneously.
Mark Sumpter, Devon

THE AMAZING SPIDERMAN X2

On the high score table type GENERIC. When you next press the Help key during play you'll be rewarded with full energy.
Toby Clarke, Derby

NARC X5

You shouldn't experience any problem with the blue dustbin cheat, perhaps you're too slow! Anyway, try typing BLAST to set off a smart bomb or MUNICION for lots of ammunition. Typing NOENEMIG out on the keyboard should help you out as well.
Brian Tanner, Cork

JIMMY WHITE'S X7

Enter the trick shot mode and whilst on the table press F7 followed by F4 and then F1. A double clicking noise will be heard if you've done it properly. Now return to the control menu and access the demo mode menu and there should be a third option that's appeared: 'DO A 147 BREAK'. Select this and you can watch the computer make the ultimate break as many times as you wish. During a one-player game, if you commit a foul, press both mouse buttons to get another shot.
Simon Dill, Blackpool

MONKEY ISLAND X8

Use the compass from Stan's to get the key. Then use it to open the hatch. Use the grog on the dish to pass the rat and take the grease from the pot and open the door. Use tools on the crate and return to cannibals.
Andrew Olden, Wales

MARBLE MADNESS X11

Sorry it's not the cheat, but if you want to see something interesting on the first level just stay where you are after you've completed it and watch what happens to the game.
Ian Gold, Somerset

MICROPROSE GIVEAWAY

CU AMIGA have linked up with Microprose, one of the world's leading software companies, to offer some exciting software prizes to each reader who writes in with a cheat and has their response printed in these hallowed pages. It's simple, really. For every cheat we publish, the reader who supplied us with the information will receive a top Microprose game. Gratis. Completely free. Can't say fairer than that, can we?

small tips

DeluxePaint Color
WARNING
CRITICAL DAMAGE

EPIC

The levels codes for Ocean's space shoot 'em up are AURIGA, CEPHEUS, APUS, MUSCA, PYXIS, CETUS, FORNAX, CAELUM and CORVUS. Thanks to Ian Glendon from Hull for those.

ELF

On the first level go up to the sage, enter the talk menu and type in CHEAT, then enter what he replies.

LED STORM

A pretty diabolical game, but if you're unfortunate enough to own it, type AMIGA DAVID BROADHURST WANTS TO CHEAT to gain infinite energy.

PROJECT X

Apparently, there's no cheat for this game, but we bet that sooner or later one will turn up. Here's a handy tip while we wait, though. When you encounter a really difficult bit and die, after you return with a new life fly straight to the very bottom of the screen before you stop flashing and you will find yourself in a secret tunnel with no nasties whatsoever.

PARASOL STARS

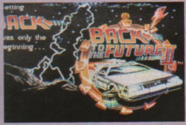
When you are in Ocean World on the fourth level, paralyse all the nasties and get the purple heart (if there is one) in the top left corner of the square. Get all three green fruits (it's easier if you're playing a two player game now) and you will be transported to the last world.

KLAX

This tile-based puzzler can cause more than a few headaches, but if you ever get stuck on a level just press 3 to skip it.

BACK TO THE FUTURE 2

Pause the game and type THEONLYNEATTHINGTODO if you want to get off the first level of this game with minimal hassle.



BACK TO THE FUTURE II

ATOMINO

The level codes to this addictive puzzler are:

SECTION 10-ACID
SECTION 20-ARROW
SECTION 30-EMISSION
SECTION 40-LAVA
SECTION 50-CAVE
SECTION 60-ELIXIR
SECTION 70-BONE
SECTION 80-WOOD

OPERATION THUNDERBOLT

When you get to the high score table enter your name as WIGAN NINJA to receive infinite lives.

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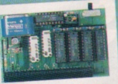

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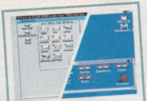

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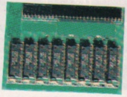

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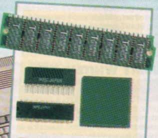

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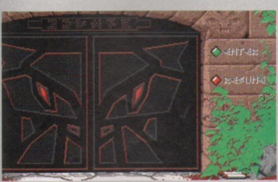
RETURN TO THE DUNGEON

If you were asked to nominate the greatest computer game you have ever played what would you say? *Elite, Starglider, Pacman, Interceptor, Zork, Leisure Suit Larry?* Everyone has their own favourite, but for me, the game which still sends shivers down my spine is *Dungeon Master* from US-based Faster Than Light (FTL). This RPG masterpiece has been around for years, and still ranks right up there alongside the latest RPGs for sheer gameplay and atmospheric graphics. *Dungeon Master* and its sequel *Chaos Strikes Back* were published in Britain by Mirrorsoft, and since the Maxwell-owned company folded, anyone wishing to get hold of these games has had a problem.

Happily, another British publisher has taken up the torch, and from this month Psygnosis will be handling the sales of these games in Britain. An even better piece of news is that they will be selling both *Dungeon Master* and *Chaos Strikes Back* in a compilation. Hooray for Psygnosis! If you have never played the game, and you suspect that it must be dated by now, never fear. *Dungeon Master* is still the yardstick by which all new RPGs must be measured. You have Tony Gill's personal guarantee that you'll love it. Play it, and if you don't like it, I'll be very surprised!



Thanks to Psygnosis the legend continues! No other RPG has recreated the impact FTL's *Dungeon Master* made. At the time of release it was like nothing the adventuring fraternityhad seen before – for a start the Amiga version was 1Mb only, most unheard of! It was its mixture of spell creation and claustrophobic corridors that made it so special – but where's the eagerly-awaited follow-up?

PSYGNOSIS
strikes back

CAPTIVE

Walls mounted on rollers can be found in both Mindscape's *Captive* and *Knightmare*. To move these walls you must use the technique explained in the manuals for both games. Pete Kourtis of Edgware obviously thinks that real adventurers don't read manuals because he is stuck in the entrance hall of *Captive*'s first planet base and can't move the wall in front of him. C'mon Pete give yourself a break and read the book!

Federation

FUTURE WARS

Future Wars from Delphine is a typically French adventure featuring stunning sound and graphics coupled with quirky puzzles. Kim Chan from Chesterfield is stuck early on in the game although he already has the object he needs to solve his problem. There is a large military map on the wall, but he has failed to spot the small pin-hole in the map itself. If he were to stick the small red flag in the hole, he would be able to see his way ahead. Now shut your eyes Kim because someone with a signature that looks like 'Marteus Parmich' from Belgium is stuck in the next location. The room contains a machine which looks like a giant photocopier but, instead of solving his problems, it only duplicates them. Do you see that large white circle on the floor? Next time you operate the machine's controls, move quickly into that circle of light.

Sticking with *Future Wars*, Miss E. Roberts of Clwyd is stuck in the jail onboard the alien ship from which she cannot escape. She needs two items to solve this problem. A newspaper from the vending machine in the station and a gas cannister which is hidden next to the glass case where the girl was held in the Medieval Monastery. Which also reminds me that Bob Harcourt also has a problem and he too needs a shove in the right direction. Having entered the Monastery, Bob can't find the way out. The secret involves getting the Father Superior drunk with wine from the cellar. Having done that, search the cupboard in his room to find a remote control, then using that on one of the other barrels in the cellar an escape route will be revealed. Ignore the circle of light in the middle of the courtyard – it's just a circle of light. Damn cunning these French games.

MONKEY ISLAND

I'd like you all to say, 'G'day' to one of our Australian readers who has stopped strumming his Didgeridoo for a moment to write and ask for help with *The Secret Of Monkey Island*. Alaster McNeilly from Lameroo, (can you believe that name?) has been wandering around lost inside the giant Monkey's Head for so long that his tongue is as dry as a Pommie's bath towel. What he needs is a compass, and if that is not available he needs a navigator's head to point the way. The Cannibals have just the thing, but they wont just give it to you because they need it themselves. They will only part with this useful device if you first give them the pamphlet entitled, 'How to get A Head'. If they know how to get 'a head' when they need one, they won't mind parting with the one they've got.

Another common problem readers are having with this game is how to get the pirate out of jail. To do this you should use mugs of grog which will melt the lock (sounds like that bottle of stuff the editor keeps hidden under his socks in his desk). The snag is that the rum

Walk to
Open
Close
Push
Pull
Walk to
Pick up
Talk to
Give
Use
Look at
Turn on
Turn off

Even now, a year after its release, *Monkey Island* is still causing headaches – just wait until you play the sequel, though!

Having problems picking locks in EA/Interplay's *Lord Of The Rings*? Call Pippin, he can help!

Don't forget, no matter how old the game you are stuck in is – whether it's *Black Crypt* or *The Pawn* – we're here!

also melts the mug that you use to carry it in. The simple answer is to collect up lots of mugs and transfer the rum to a fresh one just before it melts the one you are carrying.

KING'S QUEST V

Sierra's *Kings Quest* series of adventures continues to attract a large group of enthusiastic players even though their games almost definitely require a hard disk to make them worthwhile. Sam Stoop from Antwerp has written to ask for advice with the desert section. 'What is supposed to be done in the Arab's camp, and how do I get into the temple?' asks Sam. The desert is a dangerous place, so save regularly. When you arrive at the bandit's camp enter the little tent. A quick glance will show that you are not alone, so follow the words of the prophet and let sleeping Arabs lie. There is a staff at the back of the tent which you must get, so move swiftly and carefully up the right-hand side of the screen to pick it up. This section is just plain awkward, but it can be done.

Once you leave the tent with the staff (and hopefully with your head still on your shoulders), you can now head for the temple. Along the way, you should find a skeleton and from him you can steal a single boot – and then 'hop-it'. Single boot, Hop-it. That was a joke, by the way (I'm wasted in this column). You should also take a drink wherever the opportunity arises as it gets damn hot. The beach is lovely, but the tide goes out a long way. When you arrive at the temple doors tap them with the staff to make them swing open. Again you will be given a tricky sequence which must be completed as quickly as possible – and you only get one go at it, so save before you start. You've got but a moment to grab a gold coin and a brass bottle and then get out.

I've had quite a few readers write to say that they are stuck in the cellar of the Inn. Having been bashed on the head and left tied up in a locked room, they thought their troubles were over when a friendly rat came and gnawed their bonds free. However, the locked door is now their problem. The answer to the door is to hit it with a hammer, but getting the hammer from the shoemaker in the village is not so easy. You will need to exchange the pair of shoes which you get from an elf for this handy item, but that, as they say, is another story.

LORD OF THE RINGS

Have you read Lord of the Rings? I was going to, but I was frightened that it might be 'hobbit forming'! John Tonner from Glasgow claims that he has read it, but he still can't get anywhere in EA's game. 'Do I give Lobelia the key to Bag End?' and 'Do I fight the Ghost King?', he asks. Questions, questions. I haven't even read the book, but I know that you should give Lobelia the key. First you must search Bag End and find the locked chest. Get Pippin to use his Picklocks skill to open it and find the treasures it contains. You must also use the Read skill in the library to gain the word of power (Luthien) which is needed to stop the Black Riders at the Ford. 'The Black Riders have been seen in the Shire!' Don't you just love that line? It really gives an air of menace and excitement to the book. It's not a good idea to go fighting Ghost Kings. Remember my motto: 'The bigger they are, the harder they hit!' Before you try and take anything from him, though, use the Star Key and this will bring him to life. If you answer 'Yes' to his question then the items can be safely taken.

KING'S QUEST IV

When his friends aren't looking, Karl Stevens from Ibstock wears a dress and puts ribbons in his hair. It's true! You see he thinks he's a princess who is on a quest to find the magic apple which will save the life of his/her(!) dying father. I think it's only fair that I help him and then put him in touch with a good therapist. Karl has swam behind the waterfall and hurried through the dark caves, using the lamp from the Dwarves' cave and the piece of board which he found just inside the entrance. I assume he also picked up the bone which is lying nearby, because although he doesn't know it yet, there is a four-legged friend who will want it later in the game (Isn't it smart of me to mention that now, so he won't have to write again? We've just got to get this boy cured). Having got to the other side of the caves, he is now confronted by a swamp which prevents him getting to the island where the apple tree is. Of course, he has ignored the fact the Sierra spent a fortune employing artists to draw beautiful tufts of grass sticking up out of the swamp. They also spent a fortune employing someone to draw the beautifully-animated movements which Princess Rosella goes through when the player says 'Jump'. You do have the musical pipe with you I trust? I don't want you getting to the island only to be met by that poisonous snake and you 've got nothing but your own dubious charm to help deal with it.

INGRID'S BACK

I don't know if Beth Muldrew is a Sloane Ranger, but she has been seen hanging around with Ingrid the Gnome Ranger, and been getting into trouble because of it. The Level 9 Adventure Team which created those devilish text adventures of the 1980s appear to have disappeared down one of their own twisty passages (which serves them right!), but Beth is still trying to sort out the problems that they left behind. 'How do I open the safe in part 3 of Ingrid's Back?', writes Beth. As usual, the answer is quite a sneaky one. Look around the room and you'll see that there's a curtain nearby. Hide behind the curtain and sooner or later a character called Jasper will turn up and open the safe. From where you are you'll be able to watch him use the combination and all will be revealed.

BLACK CRYPT

I've had lots of letters from those of you who are having trouble with the Ogre on Level 2 of Electronic Arts' *Black Crypt*. I would have loved to have seen your faces when you tried to hide behind the iron barred doors and the Ogre just melted them with magic. You must have the Ogre Blade sword to destroy this monster and to get that you first must find the key to the door which it lies behind. This key is also on Level 2, and is behind the Ogre. Enter the Ogre Room and run past him to find a wall switch. Pull this switch to get transported to the other side of the dungeon where there is another switch on the wall nearby. Pull this switch to reveal a door in the wall. Enter this area and you will eventually find the key you need. You must now return to Level one and use the key to get the sword.

EYE OF THE BEHOLDER

If you are hopelessly stuck with *Eye Of The Beholder*, and are quite rightly reluctant to pay out vast sums for the hint book, then here is a suggestion. Write to the PD disk library PD Soft 1, Bryant Ave. Southend-on-Sea Essex SS1 2YD (tel 0702- 612259) and buy disk V301 as it is packed with hints and maps. The cost is around two quid.

LEISURE SUIT LARRY III

Having been sat next to a boring plonker on the plane, Olaf Brungot from Norway cleverly made Larry give the bore a religious pamphlet to read and then he was able to escape from his clutches. What Olaf should now do is go to the rear of the plane and use the bobby pin (hair-grip to you), which is to be found in the meal purchased at the airport to pick the lock of the escape door. Happy Landings!

ULTIMA VI

Paul Bone isn't doing too well with *Ultima VI*. After being told by Heftimus that part of a map could be found in Dungeon Wrong, Paul has been wrecking the place trying to find it (and when I think of the time I spent making that place tidy before I left I could spit). The map is split into many pieces, and here are the locations you need to search:

1. Have a word with Koronada in Serpent's Hold. Then talk to Morchella.

2. On the fourth level of the Ant Mound you'll find a dead man in the Queen's Chambers. Search him.

3. On Daggers Island there is a harpsichord which must be moved to uncover the secret in the pirate's basement.

4. Take food with you to the fourth level on Dungeon Shame and talk with Ybarra.

5. Visit Trinsic and talk with the Mayor. The words you need are pirate and sandy. Dragon eggs are on level 4 of Dungeon Dastard.

6. Visit Artururos the Gypsy, north of Trinsic, and give him 500 gold pieces.

7. In Dungeon Wrong visit the Hydra's Chamber on Level 3 which is behind a secret door.

8. There is a shipwreck that needs investigation in the Cape Islands. 71 degrees South, 15 degrees East.

9. Once you have all of the eight map pieces you will need to talk with Homer as he has the final piece you seek.

HEIMDALL

Some kindly soul sent me a grubby piece of paper which purports to give the solution to the second level of Core Design's utterly brilliant *Heimdall*. Unfortunately, though, the solution refers to the game's islands by number, but doesn't explain which one is which. However because so many people have written re questing help with this game I will give you the information which I have and let you pick out what nuggets you can use. 1. Collect Water Spell 2. Use water on the fire and collect the ruby. 3. Take necklace from old man in the first hut, but do not enter the second. 4. Give the ruby to the Orchard Guardian then take the apple. 5. After fighting the giant, stand to the right of the books and use the Revelation Spell. 6. In the furthest room of the left hut, use detect doors and take the dragon's eggs. 7. Use Disenchantment, then take the mouthpiece from house in the centre. 8. Blow the horn after using teleport to get access. 9. Use the Shrinking Spell between the two pillars to complete the world.

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Monsters, mazes and mayhem abound in Sir-Tech's polished RPG. If you're having trouble in the depths of the dark dungeon, Tony Gill is on hand to offer some useful hints and tips.

BANE
of the cosmic forge

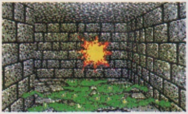
TEAM TACTICS

When you pick your team, before you sign up that battle-scarred warrior as one of your Magnificent Six, stop and think for a moment. The man you really want to hire is not him – but the one who gave him the scars! Choosing an elite team of fighters who will storm the catacombs for you will take time and not a little thought. Remember the trouble Yul Bryner went to! The secret behind the success of the Wizardry series is that it offers you such a wide choice of characters to choose your team from. Then having made your selection, you are responsible for developing their many faceted skills and attributes. Time spent at this crucial stage of the game will not only make life easier for you during the later stages, but it is guaranteed to double your enjoyment.

The first three characters are the ones who give and take the main brunt of the attacks, so they must be fighters of some sort. You must also have someone with healing powers, and you definitely want a spell-caster with the ability to heave magical destruction into the enemy's ranks. Of course, the dungeon is full of locked doors and booby-trapped treasure chests, so a sneaky thief would fit nicely into the team as well. On the face of it your choice seems obvious: you need 3 Fighters, a Priest, a Mage and a Thief. And this is where subtlety comes in. If you choose carefully you will be able to select characters who not only fit these slots, but are also capable of covering other tasks, or at least being trained in a secondary skill. (e.g. A Ninja is capable of being skilled in Fighting, Alchemist Spells and Thieving.)

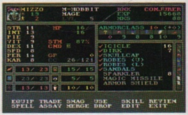
OPEN THAT DOOR

Locked doors form a large part of your problems. Unless that lock is obviously a fancy one (and you'll know from the elaborate description), then before you use up a key try and open it by other means. A strong fighter has a chance to force it open with brute force



Nothing is ever what it seems in the game's many dungeons, so always have your wits about you.

It's essential to have good fighters in your team, and use them as your main offensive force.



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SPELL ASSAY MERGE DROP EDIT EXIT

Spells are a key part to progressing through the ranks, so make use of everything you find.

THE FIRST CAMPAIGN

Just to give you a push in the right direction, here are a few useful facts which will help you complete the first stage of the game.

- The Captain's Den is the first awkward problem you have to solve, and to get in here you'll need a password. Queequeg will let you in on the secret if you tell him where the treasure is buried.
- L'Montes is the mad Frenchman who lives in one of the Towers. He will offer help if you can recover the one thing that is dear to his heart. Look for this in a room that has a mousehole in it. Perhaps if you had something to attract the mice, the solution would be revealed. The gate at the northern end of the castle can be opened by a wall button which is nearby.
- There are lots of locked doors in this section most of which you can find keys for, but for the others a thief can solve the problem. Of course, the doors in the jail would naturally require the Jailor's key and there is one to be found in an old desk drawer.
- There is an old book in the possession of someone who is long dead which will reveal the answer to one of your most awkward questions.
- Ignore the reference to the olive goo on the floor, it's just the remains of something (or someone!) long forgotten.
- Queequeg sells lots of useful spells and weapons, but what is the purpose of the mystery oil he's got for sale? Well, you certainly want to buy yourself a bottle of that stuff because it really is essential later on. The secret of the mystery oil is to be found in its marvelous lubricating qualities. After waiting around for years, there is one important object which is rusted shut and it will take some deep penetrating oil to get it open once again.

and ignorance, or a skilled thief could pick the lock. Should your thief fail to pick it you can always try again unless you get the message 'jammed'. In this case a key or a Knock-Knock spell could still open it. If you use a Knock-Knock spell on a magical lock you will get the reply 'Jammed'. The reply 'Success' or 'Failure' indicates a normal lock which still can be picked or forced .

WANT A FIGHT?

No doubt you are a very nice person. Fond of needlework, grooming the dog and taking baskets of flowers to your Granny. Unfortunately around these parts, that's not going to gain you many Brownie Points! To gain street 'cred' in this neck of the woods you need to kick some butts – and preferably scaly ones. Tiptoeing around trying to keep your nose clean and always saying 'please' and 'thankyou' will just not do. There are times when you must actively go looking for trouble or you'll never gain enough experience to cope with things when the dragon dung hits the ventilator shaft.

The funny thing about monsters is that they are like double-decker buses – when you want one you can never find one. Yet when you're tired and wounded three double-fanged beauties will come along at once. If you need a bit of action to help build up your experience try putting your men to sleep. There is nothing like the sound of snoring heroes to attract monsters. Make sure you save your game before you try this technique because you can be sure that it won't be the handsome prince who comes to kiss you awake.

INTERROGATION TECHNIQUE

Only by asking the right questions will you get the answers you seek from the characters who wander the Dungeon's dark corridors. In the early stages you will meet two useful people: L'Montes and Queequeg. Both of these roving characters have something to tell you, but it's your task to find out what. You'll find L'Montes in one of the towers and once you've spoken with him (don't worry if you don't learn much because he's stark, raving mad!), look for Queequeg and ask him about L'Montes. Try to pick out interesting words from the replies you get and ask about those things to learn even more. e.g. You – 'Do you know L'Montes?' Queeq – 'L'Montes the mad Frenchman? He lives in the tower.' You – 'He's mad?' Queeq – 'The Captain took his beloved.'

Treasure, objects and secret doors are usually found in the corner of rooms where the description mentions 'objects scattered about', and in corridors which come to a dead end. If your Mage uses the 'Detect Secret' spell the eye symbol will blink when something unusual is nearby.

There are a few scrolls and books lying around which definitely should have been returned to the Castle Library many years ago (don't try and take them back now because the fine will probably be enormous!), but their writings will be indecipherable. Somewhere in the lower levels of the Castle is a magical ring which you can use to read these meaningless scrolls.

WHAT AM I DOING HERE?

You begin your adventure in the Castle. In the main chamber you will find two chests, one contains items of healing, whilst the other has items more suitable for causing damage than repairing it. There are four towers, a spire, a belfry, and the upper and lower levels of the Castle. The entrance to the second section of the castle game is found in the upper quarters of the castle, but you will be unable to enter this area to begin with. First you must solve a few problems, then satisfy the brigands who hang around the exit, so that your group is tough enough to progress to the next level.

BONUS POINTS

You're knee-deep in gore, bits of tentacle lie scattered around the room, and the walls are stained with the blood of your defeated foes, and now comes the difficult bit. How do you allocate the bonus points which your heroes have won for gaining a level?

You might think that you should increase their fighting skills as quickly as possible, but before you do, take heed. By keeping a tally on skill points you'll find that some of these have been increased automatically. Each time a character successfully uses a skill his points will be increased. 'Practise makes perfect' is the motto of this Dungeon, so you'll find that certain skills will look after themselves. It is your job to use the bonus points to increase those secondary skills you want to foster in your men and so prepare them for other roles. You may have been unable to take a Bard with you when you set out, but if you can help someone to practise tootling on his flute you'll be surprised how useful that skill can become. Try increasing the Scout and Artifact skills for Fighters. Ninjutsu and Kirijutsu skills are valuable for Monks, Samurai and Ninja characters. A good Thief will have his thieving skills increased by practise, so you might like to give him a few bonus points in Scouting or Ninjutsu instead.

GETTING OUT OF TIGHT CORNERS

When you are battling with your back to the wall, hemmed in on all sides by slavering jowls and blood-flecked fangs, you may wish that you had spent a bit of time reading some books on battle techniques. Be carful not to select books just based on their title because I wasted time reading a book which I thought would help me when things got tough, but it turned out that 'Poo in a Tight Place' is just a book about a bear! Instead I recommend you read and inwardly digest the following advice – it may save your life.

Monsters tend to travel in groups in this Dungeon. No-one knows why, perhaps it's because they are afraid of the dark. They sure as hell ain't afraid of you! When you encounter more than one group at a time it's up to you to decide how to deal with the situation. One strategy is to try and render the most dangerous group powerless, while you attempt to fight the other. If it is possible to concentrate on the weakest group first you're more likely to be able to survive their attacks, and, in turn, destroy them. Once they are out of the way, then you can deal with the big guys. To carry out this strategy you will need magic users who can cast Sleep Spells to knock out the heavy duty monsters – Bards are also invaluable at this time. Once the main danger is temporarily out of the way hurl everything you have at the lesser monsters. There is a good chance you can destroy them and then let healers tend to your wounds before turning your attention to the sleeping beauties.

HINTS AND TIPS

BEST DEFENSIVE SPELLS

Fire Spells: Fire
Shield Water Spells: Cure Paralysis, Ice Shield
Air Spells: Air Pocket, Silence, Cure Poison, Purify Air
Earth Spells: Armour Shield, Direction, Knock-Knock, Create Life, Cure Stone.
Mental Spells: Sleep, Cure Lesser, CND, Divine Trap, Detect Secret, Mindread, Sane Mind, Illusion, Wizard's Eye.
Magic Spells: Heal Wounds, Enchanted Blade, Magic Screen, Conjuration, Resurrection.

TOP OFFENSIVE SPELLS

Fire Spells: Energy Blast, Fireball, Firebomb, Firestorm, Nuclear Blast.
Water Spells: Chilling Blast, Iceball, Deep Freeze.
Air Spells: Stink Bomb, Poison Gas, Whirlwind, Toxic Vapours, Noxious Fumes, Asphyxiation, Deadly Air.
Earth Spells: Acid Splash, Blades, Acid Bomb.
Mental Spells: Mental Attack, Psionic Blast, Death, Mind Flay.
Magic Spells: Make Wounds, Dispel Undead, Anti-Magic, Lifesteal, Death Wish.

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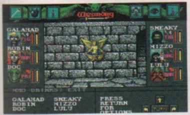
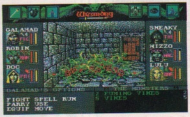


Clues are everywhere and, even if that statue looks harmless enough, always give it the once over just in case.



Take it as an unwritten law that everything you encounter is hotile – it will save you countless energy!

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October
3 North East - Northumbria Centre, Washington, A194M
4 North - University Sports Centre, Leeds, END/M1

October
10 Scotland West - City Hall, Candleriggs, Glasgow (off M8)
11 Scotland east - Assembly Rooms, Edinburgh, (off END M8)
17 London (North) - Novotel, Hammersmith, (M4) A4
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40x power
80x power
Flip Ho
Flip Vertic
Apollo Sites
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GRAPH

Graphics DIY is a new regular series which will build up over the coming months into a comprehensive, step-by-step guide to graphic and animation techniques on the Amiga. Once each tutorial has been completed, we'll be featuring the work on our coverdisk, as well as presenting clip art and other relevant graphics on our disks as and when necessary.

PART 1

TO BOLDLY GO...

This month we launch a major new graphics series, to boldly go where no-one has gone before in the quest to bring Amiga animation well and truly down to earth. Peter Lee begins a six issue mission by listing the essential ingredients that go into making a successful animation and charting the way ahead...

1 STARTING OUT

Discovering skills you never thought you had, techniques you maybe never have dreamed of, and ideas to set your fantasies alight are just some of our aims over the coming months.

And what's more, instead of just hammering away at dry, abstract ideas – which, let's face it, are a real turn off – we'll be wrapping our tutorials around a real storyline, with characters and images you're familiar with – a sequence based on the original Star Trek TV series.

Step-by-step you'll learn an animation technique and then use it in a creative situation; we'll use the skills you develop over the coming months to build up mini-sequences of action, but more importantly they will let you make your own decisions about how and where you put your new-found abilities into practice.

For instance, once you learn how to make a planet appear to revolve, you can work the same magic in getting a wheel to turn, or a boulder to trundle along; learning how to make images move realistically across backgrounds or how to create the effect of a moving camera will be of use in all you animation applications – even if all you intend doing is working with animated text.

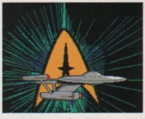
Although Star Trek is our theme, it's just the peg we're hanging a whole bunch of techniques on. So beam yourself aboard for a journey into the unknown – to seek out new skills, and boldly venture into the twilight zone... Oops, wrong programme – but you know what we mean...

PRIORITIES

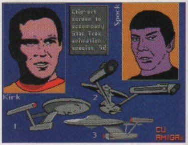
When designing an animation series, you need to do some groundwork; it may be that you want to dive straight in and start sketching, but ten minutes' preparation to begin with will save hours in the long run.

First, decide on your display mode. For this series I've gone for 16-colour low res, and for two very good reasons. Low resolution takes up less memory than any other mode – which is a vital consideration when you realise how much RAM an animation can eat up; and similarly, the memory overheads are less in 16-colour than in 32-colour mode.

If you have plenty of RAM then go for it – choose medium resolution by all means; but there are a lot of Amiga users with 1Mb and under, and they deserve all the fun which animation brings.

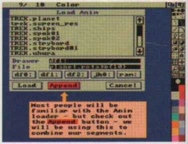


What you choose for your introduction is a matter of taste; it could be simply fancy text, or incorporate a Starfleet logo and the USS Enterprise as this one does.



Clip-art screen to accompany Star Trek animation special 92
Spock
Kirk
1
2
3
CU AMIGA

Here's a few images to get you off the ground as we venture forth into the animation unknown. This screen is included on next month's cover disk so you can use it as clipart, and it will also let you see the palette we've designed for the whole animation.



```
9/ 10 Color
Load Anim
TREK.planet
trek.screen_res
TREK.ships
TREK.spok01
TREK.spok02
TREK.strybord
TREK.strybord01
TREK.uhura
Drawer  df1:
File    planet.rotate[illegible]
df0:  df1:  df2:  jh0:  ram:
Load  Append  Cancel
```

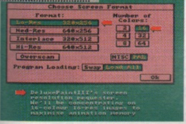
Most people will be familiar with the Anim loader – but check out the Append button – we will be using this to combine our segments.

DPaint's animation loading requester – but notice the Append button; this is a big help to us; it allows us to create many portions of animation, then combine them into one big sequence.

ICS DIY

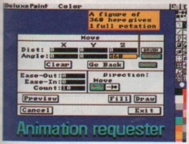
It's vital to get your ideas down on paper – or on screen in this case. By developing a storyboard of key scenes and events, you can work out details in your mind before investing your time in a project. Thirty minutes spent on roughing out a storyboard can save hours of wasted effort.

Trek anim. Board 1

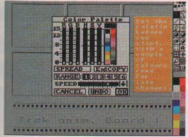


DeluxePaintIII's screen resolution requester. We'll be concentrating on 16-colour lo-res images to maximise animation memory

Our Star Trek demo will be using *DPaint*'s 16-colour mode. Although more colours will make it more attractive, it will reduce the memory space available for the all-important animations.



DPaint animation requester; the distance readings are quite intuitive, but the Z angle is a bit of a puzzle. By entering 360 in the Z angle box, you make the current brush rotate one full turn. We use this to make our planet and cloud cover spin in the Quick and Dirty planet rotation example.



You must define your palette from the very first frame; our subject demands most of the colours – red, blue and yellow for uniforms; flesh tones, colours for machinery etc. But we still have a couple of spares for emergencies, even with 16 colours.

Something else makes low res a safe option, too — speed. The Amiga is no sprinter, despite its custom chips. Using higher resolution or more colours gives the computer more data to shift around, which takes longer. In the higher resolutions animations can finish up looking like still frames if you're not careful!

PITFALLS

The downside of low resolution is only too apparent – jagged edges, lumpish pixels and a generally coarser look to artwork. But hopefully you'll agree its a problem you can live with – at least for the sake of learning animation tricks and tactics. Unless you are creating a professional animation for recording on videotape then it will serve us well. At the speed animations move, you'd be hard-pressed to spot a rogue pixel, so that's another advantage.

These tutorials aim to generate ideas and skills, so it's up to you how you use them later – the way to get things moving in low-res is exactly the same as in HAM animation or high-res – it all depends on your needs and tastes; it's like learning to write – once you've grasped it, you're free to choose a fountain pen, biro or pencil to put your thoughts down on paper.

COLOUR

The colour palette is the next big choice for our work. 16 colours isn't a lot, but our subject virtually chooses the range for us. We'll need bright primary colours for the uniforms of Kirk and his crew, flesh tones for their bodies, metallic colours for machinery and the Enterprise itself, and that's about it; set the colours right from the start, and stick with them. I find it useful to save a blank screen once the palette is defined, and load it back in whenever I start a new session or sequence. But from time to time you may want to add a colour as an idea emerges – but we'll cover that later.

SOFTWARE

There are many superb drawing packages for the Amiga – so why does everyone bang on about *Deluxe Paint* in graphic articles? Simple – most people have a copy, and few users deny that it's the best all-purpose art and animation package around. *DPaint IV* takes care of HAM (Hold And Modify) mode which allows 4096 colours on screen at once – which programs such as *DigiPaint* and *Spectracolour* had totally mastered earlier – and it's a dream to use.

So *DPaint*'s functions are like a common language, shared among Amiga artists – but if you're a relative newcomer to the Amiga or the program, don't worry, because I'll be spelling out exactly how to do things at every step of the way.

Whilst *DPaint* will be the main tool, I'll also be focusing on alternative ways of achieving effects with other kinds of software, and also branching off to show the way effects can be enhanced by using different modes.

THE PLOT

Our mini story is based on the great TV series Star Trek – not the current 'New Generation' glossy superficiality, but the familiar first Enterprise which warped into life in 1966. Many episodes had the crew answering a distress signal, orbiting a planet then beaming down to face a hazard; it was all very much 'cowboys in space', but great fun. Surprising how they made the episodes last so long really – but that's the theme of our bursts of animation. Short and sweet, but on the way exploiting the Amiga's animation potential. The first thing an animator needs (apart from the germ of an idea) is a storyboard – that's a visual key to the scenes and action.

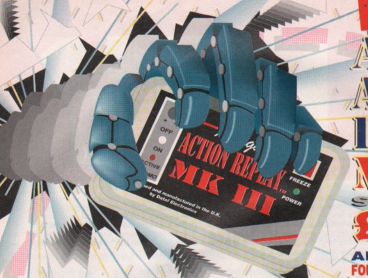
Directors such as Steven Spielberg draw up storyboards for their live-action work too; it allows you to visualise how the finished item will look before you invest any time or money in the idea. But it is especially important for animators when you consider the amount of time it takes to create and manipulate images. You don't really want to change your mind after spending three nights on a scene...

STORYBOARD

Our storyboard shows us the different shots, or major screen items, in the story. If you are planning your own animation try and practise this technique; get into the habit so that your creative time on the computer is maximised.

Although storyboards are really visual triggers, here's a summary (in words) of our plot outline:

1. Title screen
2. USS Enterprise flies in to take up orbit around revolving planet
3. Cut to interior of bridge
4. Uhura relays incoming emergency transmission
5. Spock and Kirk react
6. Cut to transportation bay
7. Beam down
8. Alien life form spotted
9. Stunned by phasers
10. USS Enterprise warps off, a job well done.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NEW **JOYSTICK HANDLER** - allows the user to select Joystick instead of Keypresses - very useful for many keyboard programs.

- **MUSIC SOUND TRACKER**
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- **AUTOFIRE MANAGER**
From the Action Replay III preference screen you can now set up autofire from 0 to 100%. Just imagine continuous fire power? Joystick 1 and 2 are set separately for that extra advantage!

NEW **IMPROVED RAM EXPANSION SUPPORT.** Now many more external Ram Expansions will work with all Action Replay III commands.

- **DISKCODER**
With the new "Diskcoder" option you can now 'tag' your disks with a unique code that will prevent the disk from being loaded by anyone else. 'Tagged' disks will only reload when you enter the code. Very useful for security.

MORE
LEVELS

NEW **SET MAP** - allows you to Load/Save/Edit a Keymap.

- **PREFERENCES**
Action Replay III now has screen colour preferences with menu setup. Customise your screens to suit your taste. Very simple to use.

- **DISK MONITOR**
Invaluable disk monitor - displays disk information in easy to understand format. Full modify/save options.

NEW **IMPROVED PRINTER SUPPORT** - including compressed/small character command.

- **DOS COMMANDS**
Now you have a selection of DOS commands available at all times - DIR, FORMAT, COPY, DEVICE, etc.

NEW **FILE REQUESTOR** - if you enter a command without a filename, then a file requestor is displayed.

- **DISK COPY**
Disk Copy at the press of a button - faster than Dos Copy. No need to load Workbench - available at all times.

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GRAPHICS DIY

Bear in mind though, as the story unfolds you can amend or add options; this is the skeleton around which the sequence will be built, but it's up to us how we flesh it out as ideas are generated, problems met and overcome, or enhancements discovered.

And while the various elements combine together to give a continuous animation – albeit with no dramatic pauses or slick scene changes – there's more than one way to exploit your work. How does an animated comic appeal? If you have a presentation package – for instance, *Elan Performer*, *Can Do* or *DeluxeVideo* you can minimise memory requirements by having each section as a 'page' for the user to start viewing by clicking the appropriate key or button. This opens up by far the most stimulating way of presenting your animations, and we'll be explaining to users of these packages how to achieve such effects in a future article.

The one real shortcoming of *DPaint*'s animation is lack of control of various portions of a long animation, so we really do need to look into other software packages for getting the most out of our story.

WORKING PRACTICE

So, to the storyboard. We're beginning with a blueprint which has at least ten distinct segments, maybe more as we progress. For a number of reasons it's better to work with each portion individually, then combine them to make the finished product. The most obvious benefit of this approach is that you can define your work in the order which best suits you.

If, for example, you were going to do an animated business chart you might well want to get the animation working seamlessly before adding a background image. Titles are generally the simplest items to complete, so you could well opt to do the beginning and end of a piece before settling down for the slog of the main sequence.

The ability of *DPaintIII* to append animations in this way is a great benefit, and a feature we'll discuss further when the need arises (this is also one of the reasons why we need to have defined a standard palette from the outset – *DP* anims cannot change palettes mid-course). In true-to-life teaching practice, I shall ignore this advice and create the animation in sequence – otherwise things could get confusing, for me as well as you!

REALITY

In my last series in CU Amiga, I passed on hints and tips for budding artists – from how to get screens animated using just colour cycling to how to 'trace' animations by a process called Rotoscoping; that's a technique where you use a digitised sequence of screenshots, trace around the outline features, then erase everything but the outlines.

If you're now competent at this, then getting the Trek characters right should be no problem. If not, I'll be reprising the key points to various techniques as we go along – so if you're a newcomer, hang tough – this series is as much for you as the street-wise Amiga user. And remember – Star Trek is only the skeleton we're fleshing out. If you can't get Spock's ears pointy enough, no problem; draw a character of your own and animate it along with the rest of us. If you're good at drawing Bart Simpson, put him in charge of the Enterprise if you like – he's better than Jean Luc Picard or whatever he's called!). But remember, the bottom line is to develop your talents and learn new skills through entertaining examples. If you're not a Trekkie , bypass the specific subject and just pick up on the technique.

INTO ORBIT

Once you've done the essential preparation, you're ready to try your hand at animating your first scene. Peter Lee looks at two ways to create a revolving world on your Amiga.

2 Right from the start, Star Trek's special effects were innovative for a TV series. And one of the more realistic and frequent visuals was of the Enterprise orbiting a planet. What made this shot so special was that the world actually revolved. And we can mimic this effect on the Amiga.

There are essentially two ways to approach this, one fairly sophisticated and one which even beginners can have a stab at.

THE HARD WAY

If you want to opt for the more professional technique, expect to have to put the hours in. It's a fairly easy technique to master, but one which requires a lot of patience before you'll achieve worthwhile results.

GETTING TO GRIPS

The process sounds complicated, but once you've grasped the basics, you can quickly adapt it to make any circular object appear to be surface-mapped once it begins to revolve. Surface mapping – effectively wrapping an image around a solid object – has been the mainstay of high-quality 3D rendering programs. These generally allow you to cover one of your creations with a graphic image – say of stone, wood or whatever – and view them from any angle.

While we don't have the luxury of an automated procedure in *DeluxePaint*, a little bit of work will give us a fair representation of this special effect.. Don't be put off by the example screen – looks a bit complex with all those numbers I know. All it shows is the main image – the key map – and the 13 small brushes which were clipped from that one image.

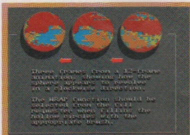
STARTING OUT

Before you put pixel to screen, you first of all have to enable the GRID function in *DeluxePaint*. This is done by clicking on the 'square window ' icon on the tool menu; the default grid size is 8 x 8 pixels, and this suits our needs very well. To check this figure, click on the same grid icon, but with the right mouse button. If for some reason the figures are not 8, type the correct numbers in the appropriate X/Y squares. Once the icon is selected, your pointer will now snap to an invisible grid on screen. Keep the grid on for the next phase.

LANDING BAY

Graphically, the first thing we need do is choose our new world's sea colour from the palette. As this is an alien world, you can make the sea red, the land blue – or any combination from the master palette which takes your fancy. The surface of your world has to be drawn flat, similar to the way atlases flatten the globe in their projections, so you must drag out a rectangle of colour. Now switch the grid off (click once more on the grid icon to deselect), to allow you to draw the land masses with the freehand area fill tool. Afterwards SMEAR the edges to give a random, chunky feel to the coastal regions. Switch the GRID back on now, and under

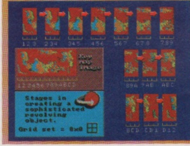
➤



Three frames from a 12-frame animation, showing how the sphere appears to revolve in a clockwise direction.

The WRAP function should be selected from the fill requester when filling the hollow circles with the appropriate brush.

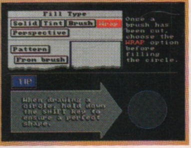
Left: Three samples from the sophisticated planet revolution technique. The land masses move around the globe in a realistic way.



Stages in creating a sophisticated revolving object.

Grid set = 8x8

Bottom Left: Thirteen small brushes have been copied from the master map. Each brush has a two-portion overlap, worked out by using *DPaint*'s grid function. By using these brushes in sequence and wrapping them into identical circles in a thirteen-frame animation, smooth rotational mo vement is achieved. By the way, it's easier than it looks!



Once a brush has been cut, choose the WRAP option before filling the circle.

When drawing a circle, hold down the SHIFT key to ensure a perfect shape.

Bottom: When filling your empty world circle, the planet brushes have to be used in conjunction with *DPaint*'s wrap fill option, whose locati on on the fill requester is shown here. To get a perfect circle for your world, hold the shift key as you drag out the circle.

GRAPHICS DIY

your flat world, and with the smallest in-built brush selected, put a dot at every interval (they will be 8 pixels apart, remember, and your brush will jump to the correct location). These are our reference markers (it's wise to number them), and will not be used in the drawing.

CUT IT OUT

Select the rectangular brush-cut option from the tool menu and, starting at the top left-hand corner of your drawing, drag out a rectangle three units wide. You will find the cutting tool also snaps to the invisible grid. You can store the brush either on the same screen, or flip to *DPaint*'s spare screen by pressing 'j' on the keyboard.

You have now made the first of thirteen brushes. Apart from the first, each brush will contain two units of the previous brush, plus one new unit. As an example, your first brush contained units 1, 2 and 3 (one unit is an 8 pixel-wide section). Your next brush will miss unit 1, and include 2,3 and the new unit, number 4; and so on.

When you get to the last two sections of your planet image, you will have to add units from the beginning to make sure the brush has three portions. So, on our thirteen-portion image, the very last brush would contain the thirteenth portion, plus the first two portions added to ensure a continuous cycle. It sounds worse than it is: a glance at the example screen showing the actual portions under each brush should make the process clearer.

FILL ME IN

One maxim you can never over-stress in Amiga graphics is 'Save often', and I can't over-emphasise this. There's nothing more depressing than repeating artwork which has been lost through one reason or another. So, having saved your screen of brushes, we need to set up a thirteen-frame animation scene. Keep your brushes screen as the spare screen and, flipping to the alternate screen, clear it to black. To draw a perfect circle for the planet, hold the SHIFT key down as you drag out the circle; use a dark grey colour for the outline. Now pull down the animation FRAMES menu option and enter thirteen in the frames total. This will create thirteen cells, each containing the circle.

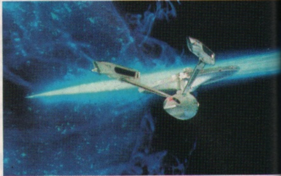
GO WITH THE FLOW

If you now flip to your spare screen, you should see your world map brushes; if not, load them into the spare screen. As the brushes were placed with the grid snap on, by activating it again and choosing the rectangular cut tool, you will find the brush portions are easy to pick up – the brush snaps into place around them. Once you have picked up brush 1 (containing portions 1, 2 and 3), flip to the first screen of animation (keyboard j).

Using the right mouse button, click on the fill tool. A requester will appear, and you should choose the WRAP option. This tells *DPaint* to use the current brush to wrap into the shape to be filled. Select the fill tool (left button), and fill the circle in the first frame. You will see your rectangular brush curve into place as it fills the disc. You need to repeat the following procedure for each remaining frame: Press j to access your map page. Clip out brush 2 (containing portions 2, 3 and 4). Press j to return to the animation cell; press keyboard 2 to advance the animation one frame, then fill the circle. Do this until all thirteen frames are complete. When you play your animation, you will now see the globe (as it has become) turning. Increase or decrease the speed (actually it's the frame rate) by tapping the left or right cursor keys a few times. Once it's complete, although it is only thirteen frames long, by clipping out the revolving world as an animbrush, you can paste it into a longer sequence.

THE EASY WAY

If you think life's too short to be figuring out grid spacing and wrap fills, then there is a less time-consuming alternative. Here's what to do...



This method isn't as elegant, but once the animation is playing, the effect is pretty clear to the untutored eye – a world spinning.

First, draw a circle in the colour you intend the sea to be. (Remember, to get a perfect circle, hold down the SHIFT key as you drag out the shape). Copy this circle and paste it alongside for the time being.Then draw some terrain features onto the first globe in a land colour, and smear the edges to give an uneven look to the coastline.

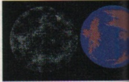
Moving onto the duplicate circle, fill it with mid-grey. This will be our cloud cover. Now, using the spray brush, add a few dashes of dark and light grey so you have a pepper-pot look. Choose the large round brush now, de-select the spray brush and select ordinary freehand. From the MODE menu pull-down, select SMOOTH, and rub the brush all over the grey-speckled disk. This will give a good smoky effect.

Finally, select black as your colour, and revert to COLOUR mode from the MODE menu (or simply press F2 for the same effect), and rub out portions of the disk, to allow the planet to show through in various places – make circular movements for added cloud banding.

Your second disk should now look like a doily – smudged grey with holes everywhere. Once placed on top of the world, it should look like a covering of atmosphere. But not so fast – we need some revolution here. I find it gives a better impression of movement if the world spins in a different direction to the atmosphere. Here's how to get the planet revolving: Switch screens (keyboard j), and create a dozen or so blank frames of animation. Go to your spare screen, and cut out the world drawing, and switch back to the first cell of the animation.

Making sure the background colour is black, stamp down the world brush using the RIGHT mouse button exactly where you want your word to be situated on the screen. The animation parameters 'remember' where the brush was last placed, not where it was created.

Call up the animation movement requester (SHIFT/M), and clear the contents if any of the boxes has anything other than 0 in it. In the box marked Z, alongside the Angle parameter, enter 360; this tells the program to rotate the brush by 360 degrees (one complete revolution). It is always advisable to ensure the details in the COUNT box are the same as the number of frames in your animation. When adding frames to a sequence, this number remains at the original tally until edited.



Take one see-through ball of cloud cover, one hapless planet, and superimpose them. Make the world spin one way, the clouds the other, and whaddya know, you got a show!

Click on DRAW, and the program calculates the rotations of the world, and paste them down into the appropriate cells. Repeat with the cloud cover brush. But, after placing it exactly over the world and pressing the right mouse button, immediately UNDO the operation (keyboard u), so the damage to the first cell of animation is repaired. And in the Z/angle box, simply put a minus sign in front of the 360; this will make *DPaint* rotate the brush in the opposite direction. After the new brush has been drawn over the planet, playback the animation. It's a little tacky I know, but the speed of the animation deceives the eye.

DELUXEPAINT ANIMATION KEYS

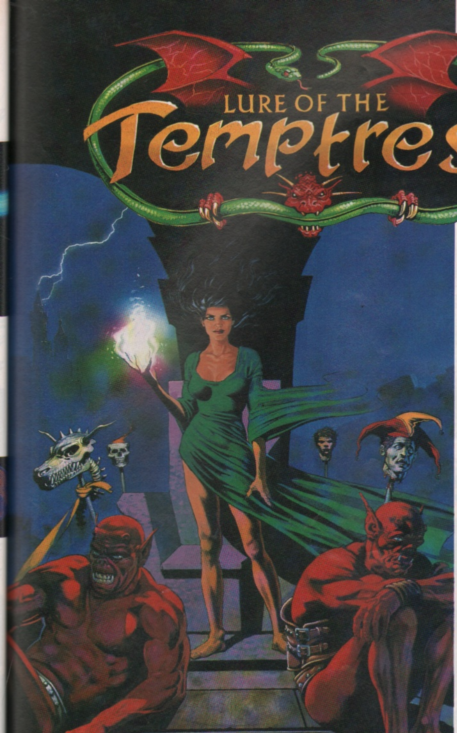
You may find it useful to keep this handy *DPaint* animation reference near you as our project continues.

KEY	RESULT
1 –	Previous frame
2 –	Next frame
3 –	Goto frame ?
4 –	Play endless loop
5 –	Play once
6 –	Ping-pong play (back and forwards)
7 –	Previous animbrush frame (when animbrush is active brush)
8 –	Next animbrush frame

SHIFT/1 – First frame
SHIFT/2 – Last frame
SHIFT/4 – Play endless loop in reverse
SHIFT/5 – Play once in reverse
SHIFT/7 – First animbrush frame (if active)
SHIFT/K – Display clear frame box
SHIFT/M – Display animation move box
SHIFT/8 – Display last animbrush frame

Left Amiga while painting with animbrush – Enter animpainting mode
R – Reverse play (when in play anim mode).

NEXT MONTH The Starship Enterprise's five year mission sees it brought to life in *DPaint* – see you same place, same time for more details...



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GAMES

House music has come a long way since the early days of MARRs and The Beatmasters. Tony Dillon takes a look at what could be the first in a long line of sample disks – featuring all the samples a home raver will ever need...

datafile amiga

RAVE ON

Love it or hate it, there's just no getting away from dance music and its classic house or rave variants. In a music world where the sample is often mightier than the musician, artists have been lifting segments from other songs and creating new tracks with them for the last eight years. You don't need to be told of their success in the music charts, or of their influence over music on home computers. A quick flick through any PD megademo or similar package will show you this.

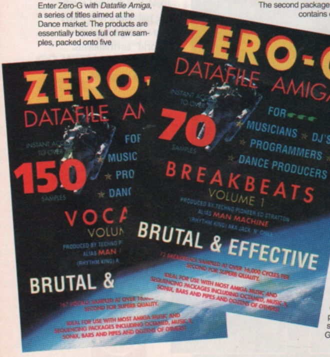
The Amiga is renowned for its sampling capabilities, so it seems only natural that people should try to emulate the chart toppers. After all, your basic dance track has around two dozen samples – from drum patterns to small snatches of vocals – so the Amiga should be able to handle it easily. It can, but the problem has always been the source. 99.9% of the time, getting a clear sample of a sound from a track, be it on CD or vinyl, is a problem. Background effects, such as a bass line or drums you don't want to capture are usually going to be present. So how do you get all the sounds you want?

ROCK DA HOUSE

WHAT'S NEXT Time & Space already have some new packages in the pipeline, you'll be pleased to here. First to come are Breakbeats Volume 2 and Vocals Volume 2, with the possibility of a package of instruments, although they feel that Gadjits have that field sewn up already. One other area they can't wait to work in is CD-ROM, and are drawing up plans for a CD full of samples. With your average CD weighing in at around 650 Megabytes of storage, that's a hell of a lot of sound in one go. For more information, contact Time & Space at the address to be found elsewhere on this page.

Enter Zero-G with *Datafile Amiga*, a series of titles aimed at the Dance market. The products are essentially boxes full of raw samples, packed onto five disks. The idea is that you take these samples and use them with your favourite music package to create your own tracks. The first set, *Vocals Volume 1*, contains all the speech effects and phrases you could ever need, over 150 different samples to be exact, ranging from sexy moans and heavy breathing through to timeless classics such as 'Wontcha Rock Wid Me One Time' and 'Hmm-mmm-mm-mmm-mm'.

The second package, *Breakbeats Volume 1*, contains over seventy sampled drum patterns.


ZERO-G
DATAFILE AMIGA
INSTANT ACCESS TO OVER
150
SAMPLES
FOR MUSICIANS
PROGRAMMERS
DANCE PRODUCERS
VOCALS
VOLUME
BRUTAL &
ZERO-G
DATAFILE AMIGA
INSTANT ACCESS TO OVER
70
SAMPLES
FOR MUSICIANS DJ'S PROGRAMMERS DANCE PRODUCERS
BREAKBEATS
VOLUME 1
PRODUCED BY TECHNO PIONEER ED STRATTON ALIAS MAN MACHINE (RHYTHM KING) AKA JACK 'N' CHILL
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72 BREAKBEATS SAMPLED AT OVER 16,000 CYCLES PER SECOND FOR SUPERB QUALITY
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Anyone who has ever tried to create a dance drum pattern without the aid of a drum machine will know that it isn't easy. With so much going on at once, four channels is often not enough to utilise all the fills, hi-hat riffs and small runs incorporated in modern dance tracks. Each breakbeat is a fully contained dance rhythm track, so you don't have to program them. If that isn't an instant boost, I don't know what is.

Vocals Volume 1 is packed to bursting with all the little vocal touches you could want, from power-packed lead vocal lines such as 'Scratchit So Nice Gotta Hear It Twice' and 'Put The Needle On The Record'. There's a lot of these and they are backed up with two other disks featuring more musical Wohs and Yeahs than you could shake a stick at. On top of that, there's another disk containing such odd speech samples as 'You Are Being Taken Under Our Power To Your Destination'.

CRYSTAL CLEAR

Each sample is incredibly clear, and so they should be, coming from the original samples bank of Ed Stratton, otherwise known as Man Machine. Nowhere else are you going to find a bank of dance samples as comprehensive or as useful as these, even if you sat down at home and tried to dissect your favourite songs. My only real gripe with some of the vocal samples is that they are clipped a little early. Ends of words are missing in quite a few instances, although once the samples get mixed in with the general frenzy of everything else, this stops being the minor problem that it is.

Although it is only really for people who take their music seriously, I have to admit that these collections are absolutely essential for musicians and programmers alike. There's no reason at all why they should only be used in dance tracks either. If you fancy getting your hands on some 'wicked' (sorry, the 'hip'n'happening' manual vernacular got to me!) samples, then there's nowhere better to look.

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Ed's samples, sen
your cheque or po
order for £29.95 t
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DATAFILE
. . . a t a g l a n c e

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LIMITED USE

Most video software performs one basic range of tasks – captioning, special effects such as fades and wipes, test routines, or whatever – so putting together a complete selection of video utilities can be expensive. ZVP's *Video Studio* is recognised as one of the most comprehensive programs in the field since its launch just over a year ago. The latest revision, *V3.0*, is more powerful, more user-friendly and more flexible than ever before – so much so that, armed with your Amiga, a genlock, a camcorder, a VCR and Video Studio, you could probably take on George Lucas – well, nearly!

COMPATIBILITY

Video Studio comes in a plastic case with two disks and a comprehensive spiral-bound manual. At least 1Mb RAM and two drives are recommended. However, a hard disk drive is a distinct advantage, since it allows you quicker access to all the separate modules which make up the package. This new version has been tested on A500s using Kickstart 1.2, 1.3 and 2.0, and on A2000s and A1500s up to Kickstart V1.3, and ZVP are working on a version compatible with the A500 Plus with Kickstart 2.0.

If you're new to the business of video production, you'll be pleased to see that the manual not only illustrates how to connect up your Amiga, video sources, genlocks, recorders and video mixers, it also explains a good many of the technical terms involved in video production.

Booting from disk VS1 (a substantial amount of which is devoted to the 30 or so fonts supplied with *Video Studio*), you should then open the disk VS2 window to reveal the Link and Depts icons.The Depts icons allows the access of the individual modules separately, but it's often easier to approach them through the Link program.

The Link screen display features some very decorative icons illustrating the program's main modules, together with buttons which access the program's assorted utilities. These include options to centre the display on-screen, to set the real-time clock, make workspace on a backup disk, or to exit the program. The program modules can also be selected from the main Link screen.

MODULARITY

The Test module includes a comprehensive selection of video test patterns, selected by double-clicking on any of a screenful of buttons. The main function of most of the patterns is to allow you to monitor the performance of your video equipment, or the quality of your video recordings through subsequent generations of copies.

All twenty-five test patterns are vector-drawn to save disk space. While some deal with extremely technical video functions, many serve obvious purposes: Crosshatch tests the vertical and horizontal accuracy of your monitor; Saturated Colour screens allow you to test for colour irregularities; a VCR Test display checks for jitter, colour displacement, or edge-wobble; and the good old Test Card is a useful visual check for several colour and alignment features. There are also audio test facilities, and about the only thing missing from this module is the little girl with the clown and blackboard!

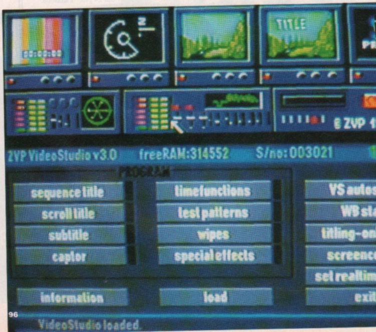
The Wipe module is one of the most powerful features of *Video Studio* – in conjunction with a genlock

ADDRESS BOOK

For more information regarding *Video Studio*, contact Z Video Products at 11 Danacre, Laindon, Basildon, Essex. SS15 5PT. Or give them a call on 0268 411719. The software costs £119.95, including VAT.

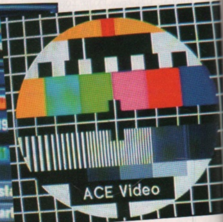
Video Studi

With video production work becoming increasingly popular on the Amiga, there are loads of software packages aimed at the home video brigade, as well as the more serious user. Chris Jenkins examines the latest release of an old favourite.



ZVP VideoStudio v3.0 freeRAM:314552 S/no:003021

VideoStudio loaded.



Versatility is the main feature of *Video Studio*. From creating test patterns to controlling genlocks, this product attempts to bring all the diverse elements of serious video production together in one cohesive package. *Video Studio* adopts a modular approach to its work which is good news for floppy-drive users – there should be less swapping disks unless you are horribly disorganised.

VIDEO STUDIO 3.0

. . . at a glance

• Modular video production program • Requires 1Mb, dual drives. Hard drive and foreground-keying genlock preferable. • IFF font and graphic compatible • Modules include test patterns, audio test, wipe effects, special effects animations, text processor for captions and titles, time functions, Captor presentation routine. . .

which supports foreground keying (almost anything except the Minigen, Neriki, and Commodore's), it produces professional-looking effects of the video picture wiping to a coloured background. With extra hardware – a video mixer, for instance – you can even wipe from one video image to another, and once you can do that the video world is your oyster.

Just double-click on the icon representing the wipe pattern you require, and each subsequent click will wipe the pattern on and off the screen. The patterns include expanding and contracting boxes, multi-directional wipes, spirals, crosses, mosaics, vees, lightning strikes, zig-zags and others – twenty-five in all.

The next module features six vector-generated time functions, which can be overlayed with IFF images and text displays such as a company logo or captions. Essential for any serious video production work, the options include a 'station clock' for count-ins; a 'breakfast-time' digital clock which appears in a corner of the screen; a video frame-counter which can be useful in the tape editing process; an automatic date display, and so on. Using an overlay routine, it's also possible to incorporate most of the clock functions into other displays using any font, colour or rendering (highlight, shadow, boxing or shading) you prefer. The title of the next module, Special Effects, is a bit of a misnomer. It actually consists of a collection of vector-drawn animated routines, most intended to work with a genlock to overlay the computer graphics on your live video. Finally, selected from a menu of twenty-seven options, the package's effects include screen masks in a number of shapes – the 'double-zero' view through binoculars or a scoreboard-style effect, for instance. These might sound hackneyed, but can spice up a drab video if used sparingly.

io 3.0

TITLING

Of course, one of the most important functions of video software is titling, and *Video Studio's* Speedtext module more than takes care of this. Speedtext is a text processor using two main commands, '#' and '^'. After defining a job name you select Edit Text and enter the content of your titles or subtitles into the text window. Titles scroll vertically, whilst subtitles move horizontally across the bottom of the screen. The twenty fonts provided cover a good range of styles without becoming too gimmicky, and you can always use your own choice of IFF fonts. SpeedText's fully-featured text editor uses the '#' symbol to set the end of a title page, and '^' indicates a line split, so you can have the name of a character on one side of the screen, and the actor on the other. You could also use the text grouping functions to define text styles for the names of the actors and characters.

SpeedText allows you to play around with three fonts, eight text colours and one IFF background picture or logo per job. Look at the titles of a typical TV program and you'll realise that this isn't as restrictive as it may initially sound. Using a smooth bitmap scroll it gives good results at the expense of taking up a good deal of memory. For more complex work, there's the final module, Captor.

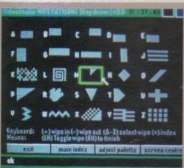
Captor is a complex WYSIWYG text editing and display utility, offering more manual options than SpeedText, though it does very much the same basic job. In addition to SpeedText's features, Captor lets you add transitions such as fades and cuts between screens, to accumulate pages on top of each other. This then allows the user to insert manual cues in a title sequence, loop continuously, display a series of IFF backgrounds or logos, and to display multiple fonts. It's one of the most flexible programs of its kind, and certainly one of the most straightforward to use.

CONCLUSION

Video Studio is a compulsory purchase for all Amiga-owning video producers, especially when you consider that ZVP's user support includes a telephone helpline, an update information service, and regular releases of support software. The first Graphics Supplement package, costing a reasonable £39.95, features three disks containing over 100 IFF graphics and forty example jobs designed for producers of wedding videos.

There's also a MiniStudio, titling-only version at £49.95, and a 250Pro version of *Video Studio*, similar in function but considerably different in execution. The main advances are the ZScript programming language and Videobench environment, which let VSPro build up complete job files so that the entire video production process can be automated. VSPro also includes 400K of online help text files, and demands the use of a hard drive.

With such support forthcoming from ZVP, and the overall user-friendliness of the package, it's not surprising that Video Studio is becoming known as the number one package for video production work on the Amiga. It's not cheap, but when you bear in mind the wealth of options the package offers, then I believe you'll consider it money well spent.


VideoStudio WIPE PATTERNS [Keydriver] v3.0 11 :37 :49
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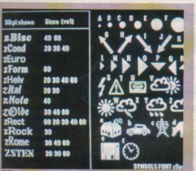
Z
exit
main index
adjust palette
screen centre
ok

Keyboard: (+) wipe in (-) wipe out (A-Z) select wipe (*) index
Mouse: (LH) Toggle wipe (RH) to finish

A Video package these days stands or falls on its wipes and effects. Combined with a genlock which supports foreground keying, *Video Studio* can produce professional looking effects such as wiping to a coloured background. With a bit more hardware you could easily wipe between two video images.



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zRock	30
zRome	30 40 60
ZSTEN	20 30 60

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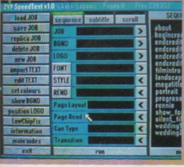
SYMBOLS FONT zSy

ZVP support their products well. In the case of *Video Studio* the most immediate example of this is the special Graphics Supplement package, comprising over 100 IFF graphic images and forty example jobs to help turn any wedding into a media event. The supplement costs £39.95 and is available from the same source.


ZVP SpeedText v1.0 (Auto-Layout) Pages 0 Free 236352
load JOB
save JOB
replica JOB
delete JOB
new JOB
import TEXT
edit TEXT
set colours
show BGND
position LOGO
LowChipFix
information
main index
exit
sequence
subtitle
scroll
JOB
BGND
LOGO
FONT
STYLE
REND
Page Layout
Page Rend
Cue Type
Transition
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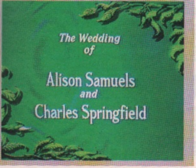
wedding2


The Wedding
of
Alison Samuels
and
Charles Springfield

ZVP £119.95

Powerful, user-friendly and comprehensive video production

EASE OF USE	95%
VALUE FOR MONEY	80%
EFFECTIVENESS	94%
FLEXIBILITY	89%
INNOVATION	82%
OVERALL	**92%**

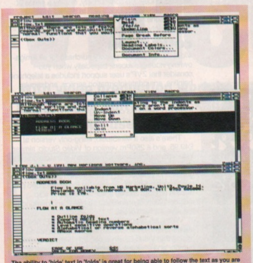
Flow 3.1

There are so many uses for a wordprocessor that it's no surprise some have taken on specialist characteristics. Nick Veitch investigates the latest version of *Flow* from New Horizons.

GO WITH THE FLOW

The world of wordprocessors must be one of the most bitterly contested markets. Not everyone will ever want to DTP a newsletter, sample stereo sounds or master a multimedia presentation but everyone who owns a computer is going to want to write something with it.

It is understandable that many wordprocessing packages have included extra features for specific applications, although a lot of these can be easily written off as gimmicks. Does *Flow* fall in this category?



Tha ability to 'hide' text in 'folds' is great for being able to follow the text as you are writing it but it doesn't make up for the lack of more usual (and potentially useful) word-processor commands.

WHAT DOES IT DO THEN

Flow is intended to aid 'structured' writing. The most obvious use of this is in technical writing.

When writing a report, or a user manual for example, it is often the case that you end up with a load of headings like '17.106 – further applications of the 68 tooth gear driver'. The trouble is that because the headings are often not in plain english it is difficult for the user to navigate around without a really good contents list or index.

If you think that's bad, you should try *writing* one of these monoliths of the English language. When you are the author you don't get an index. Just because you are writing the thing doesn't mean that you know where everything is or what sublevel heading number you are on all the time.

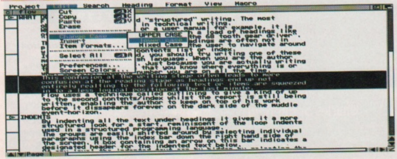
This confusion at the writing stage often leads to more confusion at the reading stage as headings end up not entirely relating to the following text or items are squeezed in to a less logical position at the last minute.

Flow uses a technique called outlining to give a kind of up to the second contents/index whilst the report is still being written, enabling the author to keep on top of his work before it dissapears forever on the dark side of a muddled event-horizon.

INDENTS

By indenting all the text under headings it gives it a more structured look for a start.

The groups are easily shifted around by selecting individual paragraphs using the index bar down the right hand side of the screen. A box containing an arrow on this bar indicates a designated header for the indented text below.



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event-horizon.
By indenting all the text under headings it gives it a more
structured look for a start, reminiscent of the loop indents
used in a structured programming language.
The groups are easily shifted around by selecting individual
paragraphs using the index bar down the right hand side of
the screen. A box containing an arrow on this bar indicates a
designated header for the indented text below.

At any level, the indented text can by hidden by selecting the collapse option from the heading mode. This means that at the top level you can have just a list of the main headings, or under a main heading just the list of subheadings.

Automatic numbering options make it easy to keep track of the '17.106's in a long technical report and you can even select from a fair range of different styles or customise your own.

WORD CRUNCHING

Although there are lots of features relating to the indents as regards sorting and manipulating them there aren't as many 'normal' functions that you would expect on a word processor. The dictionary is just a simple look up style affair, the find and replace has no query option and there are no block load or save functions. Most of the features are directly ported from *Prowrite* which is quite a good idea as these were well thought out and easy to use.

The ARexx macro support is exactly the same as it is on *Prowrite* and *Quickwrite*. There are probably more potential uses for ARexx in this program than in many other wordprocessors so it's probably just as well that they are easily accessible from a menu down the right-hand side.

CONCLUSION

Although billed as a thought processor designed to eliminate confusion in the structure of your work, *Flow* can be quite confusing to use. There are certain instances where you'll find yourself wondering exactly what will happen if you choose a particular indent option on a group of text. I'm sure this is why the 'revert to saved' option was included, to allow experimentation by the user.

Another annoying factor is the lack of hotkeys. Many of the functions have keyboard shortcuts but a lot of the more important ones do not. This is criminal in a wordprocessor where the user will want to spend as little time reaching for the mouse as possible. The ability to use outlines or folds is included in other packages such as *Cygnus Editor* which, although much more expensive, provides all the features that you would expect in a word processor and is arguably easier to use.

There is a need for targetting a wordprocessor at a particular part of the market, but with *Flow*'s lack of everyday features you would need to own it and a more conventional text cruncher. Why not buy them all in one in a different package and save money?

ADDRESS BOOK

Flow is available from HB Marketing, Unit3, Poyle 14, Newlands Drive, Colnbrook, SL3 0DX, tel: 0753 686000. Price is £70.

FLOW 3.1

. . . a t a g l a n c e

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"(The Midnight Oil) treat soccer in the sophisticated way Americans treat their national games." **-The Guardian**

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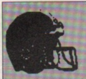

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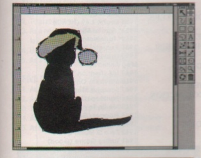
expert draw

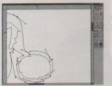
Desktop publishing can be an expensive business. Mat Broomfield looks at a package which brings professional power within an amateur's budget.

NO LIMITS

Desktop publishing (DTP) can be fraught with endless expense, but it doesn't always have to cost an arm and a leg. After buying a DTP package, most people will require some form of structured drawing software – which can cost a further £200. Genisoft have released a budget package, though, which costs roughly the same price as two games.

The main reason so many people start using DTP packages is the increased quality and flexibility such systems offer. However, it's not enough to simply design hundreds of pages full of drab-looking text; you're going to need illustrations to add interest to the finished results. There are plenty of clip-art disks available, but they're limited by the resolution of the original image. A bitmapped image will never be free of its jagged, pixellated origins, and, as a result, the final print-out will suffer. To overcome this problem, most DTP packages accept structured drawings which are created in an entirely different way, and are only limited by the resolution of the output device, be it a dot matrix printer or a professional linotronic machine. *Expert Draw* is capable of creating such images, and at only seventy quid, it's considerably cheaper than its rivals.





The package's 'vectorise' option converts bitmap files into structure images. By doing this, the user can then zoom into a specific area of the screen to get a better look at how the lead and start points interact to form bezier curves.

ADDRESS BOOK
Expert Draw costs £69.95, and is available from Genisoft, Unit 3, Poyle 14, Newlands Road, Colnbrook, Slough, SL3 0DX. Tel 0753 686000.

FLEXIBLE PAGES

The package provides a number of drawing tools such as Line, Freehand, Polygon, text, circle, oval and quadrant, but before they can be used, a page must be defined. These can also range in size from A3 to A6, and can also be delineated in inches, centimetres, millimetres, points or picas.

Once a page has been defined and a drawing tool selected, you can begin work. It has to be said that the package compares very favourably against *ProDraw* in terms of its user-friendliness. I found the 'Close polygon' icon particularly useful, and one which *ProDraw* is sadly lacking. I also liked the way that images created on this package can be output to both dot matrix or postscript printers. Another bonus is that they can also be saved out as IFF screens, so that they can be edited using, say, *DPaint*.

EXPERT DRAW
. . . at a glance

* Surpasses its novelty value * Very easy to use
* Badly-written manual * Good value for money

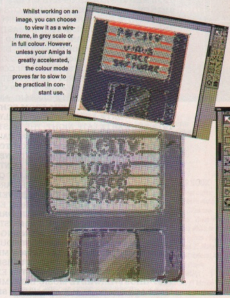
A CATTY PROBLEM

Unfortunately when printing, the program suffers from an unforgivable failing: once printing has commenced, a single key-press can cancel the print. With images often taking more than fifteen minutes to print, I found it infuriating to lose the last few seconds of printing if I accidentally touched a key.

Another (minor) gripe is the manual, which has been written by someone who is obviously uncomfortable with the English language. As a result, the manual varies between unnecessary jargon and rather clumsy sentence formations, making the manual more confusing than is really necessary – after all, who is going to want to struggle with an unwieldy manual?

CONCLUSION

Expert Draw is a serious structured graphics utility capable of creating clips for every major DTP package. With its comprehensive and well thought out range of tools, it challenges even the best rivals, and carries a price tag low enough to give it a slight edge. It's extremely intuitive to use, and extremely comprehensive in its many options and capabiltiies – particularly in the creation of bezier curves. If you don't already own *ProDraw*, give this a long hard look before you buy anything else.



Whilst working on an image, you can choose to view it as a wire-frame, in grey scale or in full colour. However, unless your Amiga is greatly accelerated, the colour mode proves far to slow to be practical in constant use.

GENISOFT £69.95

Professional features at a budget price. Recommended...

EASE OF USE	85%
VALUE FOR MONEY	90%
EFFECTIVENESS	95%
FLEXIBILITY	85%
INNOVATION	50%
OVERALL	**89%**

WHY GO STRUCTURED? Bitmapped images – such as those created on *DPaint* – consist of a series of individual oblongs (called pixels), which are arranged to create an image. *Expert Draw* images are constructed using a special type of curve known as a Bezier. Ironically, the term curve, is also applied to straight lines in this case. Bezier curves consist of two points, a starting point and the end, between which a joining line is drawn. This line is automatically given a direction, known as a vector, and unless otherwise specified, this will always be towards the other point. However, each point also has what's known as a lead point attached to it, and this may influence the shape of the joining line.

If you imagine that the joining line is a piece of elastic, and the lead point is to be connected to its centre, you can imagine the effect if the lead point is moved further away, or at an acute angle to this line – It stretches it. That is basically how a bezier curve is constructed. Structured images consist of hundreds, perhaps even thousands of Bezier curves, some of which are connected to form opened and closed polygons, whilst others simply form abstract lines. It is the mathematical nature of this type of drawing that permits such a high-quality of output. Rather than sending pixels to the printer, mathematical relationships are sent. These relationships remain the same, regardless of how big or small the finished image will be, thus the printer always produces the best possible output.

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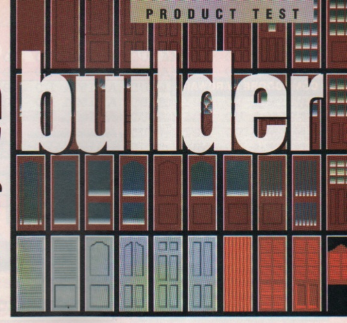
house builder

& movie clips



If you want to draw, but can't, no problem! Mat Broomfield scans a few tid-bits which can turn even the biggest Dodo into a Picasso

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3. As a new-age version of Lego to get young kids used to the computer.
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2. As quick and easy clips for genlocking onto video tape.
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4. As full-colour clip art for desk top publishing.
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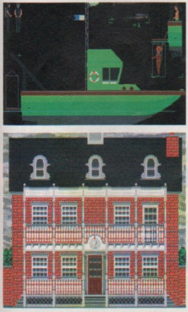

The creation of such dwellings and images as seen above is made extremely simple thanks to both packages' excellent clips.

DOING IT YOURSELF

We're used to seeing game construction kits and we've seen boot-block and slideshow construction kits, but a graphics construction kit is a new idea.

House Builder is spread across two disks, and consists of a multitude of house parts from which the user can construct a wide variety of buildings. These can be as diverse as double-glazed stone-clad Coronation Street-style affairs to thatched Tudor mansions with Georgian accessories! Basically, the street is your oyster!

Both disks are divided into sub-directories containing windows, doors, balconies and all the features you'd expect. Each directory contains a variety of 32-colour IFF screens which are packed with images. To access the graphics for a particular element, simply load the required picture to a spare screen of your art package and cut out the specific part as a brush. The selected area can then be placed on to your main work screen or, in the case of the brick patterns, used as a fill pattern. Constructing your house is simplicity itself, and should take less than fifteen minutes from start to finish. Naturally enough, though, when you consider that a limited number of features are available, the results tend to look rather formularised. However, if the system is used as the basis for a picture, rather than the complete image, your work can be personalised to add individuality.

MAKING MOVIES

The supporting disks, *Movie Clips*, are complimentary to the *House Builder* set, and are supplied on single disks. Each disk contains a selection of images based around a number of themes, including Air, Road and Sea Traffic. The images are all created using the 32-colour palette, and use the same palettes to ensure they are compatible with each other. Furthermore, they all work to the eight pixels per foot scaling system.

Although each set is suffixed by the word 'Traffic', *Movie Clips* consists of far more than simple vehicles. For example, the Water Traffic set includes river banks, waterfalls, animated fishermen, deep sea divers, wharfs and just about everything else connected with rivers or the ocean.

GOOD VARIETY

The variety of images is the package's strongest point, allowing the user to create complex 'real life' scenes without drawing it yourself. The objects are a little bit sparse in terms of shading details, and this tends to highlight their lack of dimensions. Diskoteque's artists also seem to have problems drawing human figures and most have a child-like quality which reduces their usefulness. Having said that, the inanimate objects such as boats, planes scenery, etc, are quite well drawn, and won't require much work to make them look professional.

CONCLUSION

Although the concept behind these full-colour clips is a good one, the actual quality of the images leaves a little to be desired – especially at what seems a rather high asking price. I suggest you use them as outlines for your work, rather than using them as a substitute. *House Builder* is more immediately gratifying, but *Movie Clips* has greater long-term potential. If you consider yourself a good artist, think twice before you buy. If you 're not, though, these can form the basis for your own images, or can be converted into sprites and bobs for use in such programs as *AMOS*.

ADDRESS BOOK
House Builder costs £20.00 for both disks, and *Movie Clips* are £10.00 each. There are currently six disks in the *Movie Clip* series : Road Traffic 1 and 2, Water Traffic, Rail Riders, Air Traffic and Horse Traffic. Contact Diskoteque at Melin-Y-Garth, Builth Wells, Powys, LD4 4AW. Tel: 05912 242.

BUILDER/MOVIE
. . . a t a g l a n c e

- Both are simple to use
- Home Builder proves a tad limited
- Collecting all the Movie disks is pricey
- Excellent if art isn't your strong point

DISKOTECH £20/£10

Good idea and well implemented, but rather costly...

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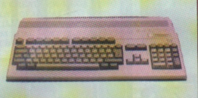

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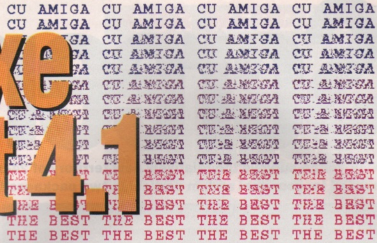
Deluxe Paint 4.1



The metamorphosis feature has been improved to allow full-screen morphs which are limited only by the memory available to the user.

Amazingly, *DPaint* has been improved yet again. Mat Broomfield gets the lowdown on version 4.1.

STATE OF THE ARTS

DPaint long ago established itself as the ultimate Amiga art package. But now, with the minimum of hype, Electronic Arts are about to release version 4.1, which among other things, makes it even more compatible with Kickstart 2 machines. Electronic Arts have obviously been listening to their users, and the result is a leaner, more functional program than before. Mind you, don't fall under the impression that we're talking about lots of major changes here, we're not. There's been a couple of minor additions and tweaks to the user interface, a couple of aesthetic changes to the appearance of the work screen, and that's it. However, the combined total results in a slicker and even friendlier package which demonstrates EA's continuing commitment to maintaining a first class product.

A QUESTION OF SCALE

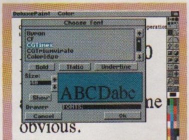
The most important addition to this revised package, though, is that it now supports compugraphic-style fonts such as those produced by Gold Disk. It also supports the entire Agfa compugraphic library, which can be down-loaded directly from a PC. This then offers access to hundreds, if not thousands, of commercial quality fonts.

The beauty of scalable fonts is that they're not restricted to any particular size. Regardless of whether you want a six point or 100 point font, the computer only needs to store one size on disk because it can dynamically alter the font as you use it. Better yet, because the fonts are stored as mathematical definitions rather than bit-maps, their quality is always good, no matter what size is used. Or at least, that's the theory... In practice, although *DPaint* makes a valiant attempt, the fonts inevitably lose quality at point sizes below about ten. At these sizes, it becomes better to use a bitmapped font which has been specifically designed at that pitch.

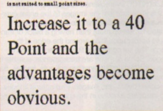
PERFECT PALETTE

Another of the more useful changes to the program, manifests itself during any palette mixing or range-setting operations. In the first place, the palette is now notched every four colours, making it easier to count when you need to alter a specific colour number. A far more useful improvement is the support for extended selections, letting you choose many colours at a time for copying, deleting or exchanging. This is particularly useful when you need to duplicate a non-sequential selection of colours elsewhere in the palette.

Staying with the subject of colours, one of the most minor modifications must surely be the removal of the 3D-style ink colour indicator. Although this feature was in keeping with the Workbench 2.0 'feel' of the program, the small beveled outline made it difficult to identify subtle changes between the ink and paper colours, so its removal is a minute, but well considered move.



The most exciting addition to DPaint 4.1 is scalable font support. Unfortunately, it doesn't look as though this feature will be available to 1.2/1.3 users. For the lucky few, though, it completely removes all font size restrictions.



CG Times 10 Point is not too good because the scaling operation is not suited to small point sizes.

Increase it to a 40 Point and the advantages become obvious.

ANIMATOR'S ANGLES

Animators may have noticed that the metamorph brush size was previously restricted to 250 pixels wide. This restriction has now been removed, allowing the user to morph brushes of differing size (memory permitting). Many users may not immediately appreciate this improvement, but it opens the way for full-screen high resolution morphing, as well as low res and interlace.

Professional and genlock users will doubtless remember the endless frustration caused when working in severe or standard overscan. How many times have you found that parts of the screen were permanently inaccessible because they were too far over to the left or bottom of the display. This problem has now been partly rectified thanks to the new ToolLimit command, which is accessed via the info file before you load the program. It's now possible to specify a maximum screen size, as well as its offset. Although this doesn't alter the actual position of your image, it restricts the location of the tool box and animation panel, thus giving you comfortable access to all parts of the screen.

CONCLUSION

Generally speaking, I could live without *DPaint 4.1*'s enhancements. They're nice, but not really worth buying this new version for. Having said that, the addition of scalable font support is a major improvement indeed, albeit only one which applies to Kickstart 2.0 owners. It finally frees us from virtually all font size restrictions and clearly illustrates EA's intentions to stay in pole position. In addition, Electronic Arts are offering to upgrade your *DPaint 4* disk for a mere £9.99, so contact them for further details. As for people who don't already own *DPaint 4*, how much better are you waiting for it to get? Go and buy a copy now!

ADDRESS BOOK

***DPaint 4.1* costs £89.99, and is available from Electronic Arts, 11-49 Station Road, Langley Business Centre, Langley (Near Slough), Berks, SL3 8YN. Tel: 0753 549442.**

DELUXE PAINT 4.1

. . . a t a g l a n c e

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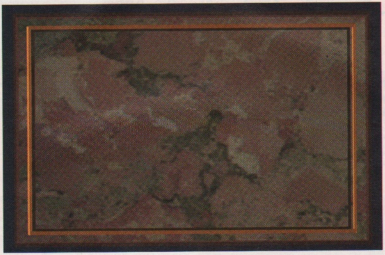
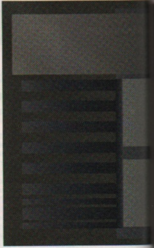
EFFECTIVENESS	95%
FLEXIBILITY	95%
INNOVATION	75%
OVERALL	**89%**

Screenma

Nick Veitch surveys the relatively new territory of 24-bit clip art (pictures precontructed for your use) and, in particular, two packages from Digital Graphics Labs.



Left: There are twenty examples of frames in the collection of which this is one. Some are smaller and in the 'over the shoulder of the frontman' style for a professional looking newsroom feel. Unfortunately, few of them have solid black backgrounds making genlocking difficult.



Right: A more unconventional approach to arranging frames. This example lends itself more to use in the world of multimedia than video.

CLIP OFF THE OLD BLOCK

Clip art for the Amiga is hard enough to find when all you want is a quick black and white illustration for a DTP project, but imagine how hard it is to find broadcast-quality images if you are involved in desktop video work. Now the Digital Graphics Library Inc. have produced *Screenmaker*, a collection of 100 hi-res 24-bit IFFs. The images are stored in a very efficient compressed format on the disks, and a small supplied utility can then be used to create images as and when they are required. The converter will create either a PAL or NTSC overscanned image from the data.

It is important that the images fill the entire overscan area – there is nothing to single out an amateurish set up more than having a black or transparent border appearing around the edge of the image. The set comprises five different groups of images. Some of these are backgrounds, suitable for overlaying text on but most are cut-outs, frames, bars or panels which woud lend themselves more to being genlocked over video images. Five natural images are also included: a house in the snow, a sunset, a jungle, a forest and a seascape.

The entire set of 100 images plus the conversion utilities manage to squeeze on to only four disks. If you install them on a hard drive it should therefore be possible to keep all the compressed images on disk at once, decompressing them when they are needed and then deleting the decompressed file once it has been used.

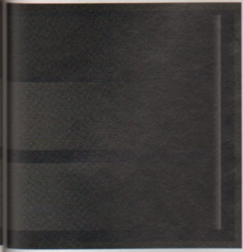
USES

Admittedly many of the images could be created in *Art Department Professional* or a 24-bit paint package such as *TV Paint*. Obviously you'll need a 24-bit display capability to use these files and most 24-bit cards come with at least a rudimentary art package so why not create your own? Well, if you fancy your chances on the fomtline of the creative arts go ahead, but you are likely to find that unless you are a skilled graphic artist it may take a while to come up with something of

Above: The images are all of a very high quality and could easily be used in hi resoloution broadcast work (either PAL or NTSC). However, you will need to possess a decent 24-bit art package and an advanced 24-bit display system to make proper use of them. A set of HAM images is also available for the less serious video artist and at a slightly more modest price.

THE REST There isn't much in the way of 24-bit clip art. None has so far surfaced on the PD circuit and no other commercial package has been seen in these offices. There are loads of ordinary 8-bit and pseudo 12-bit (HAM) images to be found in PD libraries and on bulletin boards but these are generally of a poor quality and not designed with video production or multimedia applications in mind.

ker



sufficient quality to grace your videos. Even if you do like to fiddle about with a palette, the images supplied on these disk could well provide a useful basis for your work.

The uses of these images lie predominantly in the video market, but they could also be used very effectively in a multimedia setup. All the major authoring systems will allow direct or indirect control of 24-bit hardware. If you are creating an electronic information system some of the backrounds would be ideal for overlaying text or pictures.

CONCLUSION

There is a glossy picture guide to help you make a selection without having to unarchive all of the files. Coupled with the fact that all the pictures are generated by a click of the mouse and entering the name of the image you require it's difficult to see how the system could be any simpler to use.

ADDRESS BOOK

Screenmaker **and** ***Our Wedding*** **may be available here soon through Amiga Centre Scotland (089 687583) and HB Marketing (0753 686000).No price has been set but it is likely to be around £100 & £90 respectively. You can contact the authors direct at: The Digital Graphics Library Inc., 1382 Third Avenue – Suite 333, New York, NY 10021, U.S.A.**

SCREENMAKER

...at a glance

- 100 images
- 24-bit broadcast quality
- PAL or NTSC
- Stored in compressed format

DIGITAL GRAPHICS £100

Images supplied have limited uses, but give high quality results

EASE OF USE	80%
VALUE FOR MONEY	91%
EFFECTIVENESS	94%
FLEXIBILITY	64%
INNOVATION	80%
OVERALL	**79%**

OUR WEDDING

This package is very similar to *Screenmaker*. The basic idea is the same with twenty-five images compressed onto a pair of disks, but this time there is a definite theme.

Once again, having installed the package on your hard drive, you can decompress any image by running the decruncher and giving it the name of the image you want. The image is then scaled to the exact size you require which is useful if you need to produce PAL and NTSC images. In fact, you can choose any resolution you want – you don't have to have a high resolution overscanned image.

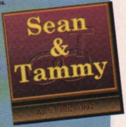
The images occupy roughly 400Kb each in PAL mode so if you are planning on using them regularly it may be useful to invest in a larger hard drive beforehand. It would also be a good idea to get a copy of ASDG's *Art Department Professional* for manipulating the images There are plenty of images in the set to give you a choice of title screens and some nice backdrops for the cast of protagonists and the order of service. In fact some of the images would be quite nice to use printed out as invitations.

The images themslves have been created with the intention that the user will make extensive use of the cut-and paste options on their paint package. With the elements provided you could easily come up with around three times as many images as you started with. In contrast to *Screenmaker* most of the images supplied are on a pure black background making it a lot easier, too.

Of course if you were in the business of videoing other peoples' weddings you could probably use the set immediately as is and save yourself a lot of time. If you don't have a 24-bit display card then a HAM set is available at a slightly lower price from the same sources. Check mail order houses for availability and pricing.

Our Wedding

Above: A nicely rendered title page. By cutting and pasting with some of the other images provided you can come up with almost limiless variations. Such flexibility makes it an invaluable tool.



Right: Eleven backdrops like this are provided on disk which are ideal for overlaying text. In this example I used the text overlay operator in *ADPro2* to add the name of the couple

OUR WEDDING

...at a glance

- 25 themed images
- 24-bit broadcast quality
- PAL or NTSC
- Stored in compressed format
- 2Mb recommended

DIGITAL GRAPHICS £90

Invaluable to anyone involved in professional video making.

EASE OF USE	80%
VALUE FOR MONEY	82%
EFFECTIVENESS	90%
FLEXIBILITY	60%
INNOVATION	82%
OVERALL	**77%**

voyag

Are all amateur astronomers nylon-clad UFO spotters? As he approaches this latest Amiga equivalent to The Hitch Hiker's Guide To The Galaxy, John Kennedy repeats to himself: 'Don't Panic'...

LOOK! UP IN THE SKY!

Every so often a program comes along which makes you glad you've got an Amiga. It may be *Devpac*, it may be *Lemmings*. For me, it's *Voyager*. Once you are used to the look and feel of a good Amiga program, nothing else will do. It's got to be intuitive. It's got to be powerful. Most of all, it's got to be wonderful. *Voyager* is all these things. Don't doubt it: if you are even slightly interested in Astronomy, *Voyager* is worth buying an Amiga for.

Unless you live in a city, you may have spent an hour or two outside in the dark developing a crick in the neck and cold feet looking at the stars above. There's something almost magical about a dark, starry night – and I don't mean songs about mad one-eared painters. Once your eyes get accustomed, you can't deny that there are a lot of pretty little lights up there. In fact, without even using a telescope it would take several years to count them all. What's more, each object in the sky is unique. Some of the brighter ones are the planets and the other specks are mostly stars. Stars are so far away that the light now reaching us from the nearer ones set off on its way well before the first episode of the original Star Trek series.

If you only take the occasional glance upwards, you might make the mistake of thinking that nothing much ever happens up there. In a way, you would be right – it's only when you watch the sky over a period of time that things begin to get really interesting. The moon waxes, wanes and, if you're really lucky, gets eclipsed. The planets – the name means 'wanderers' – change their positions as they drift across the sky night after night. Variable stars vary; I've even seen the Space Shuttle fly directly over my back garden (it took about a minute to travel from horizon to horizon and had a large trail travelling in *front* of it as it spread charged particles around).

HEALTHY COMPETITION ***Voyager* benefits in that its authors have an almost fanatical hatred of the rival program *Distant Suns*. Both programs are constantly upgraded in a furious battle, with the public becoming the clear winners. *Distant Suns* was the first astronomy program I saw on the Amiga, and has provided stirling service. Unfortunately, without seeing the very latest *4.1* version, it would be unfair to make comparisons – although it has its work cut out!**

POINT OF VIEW

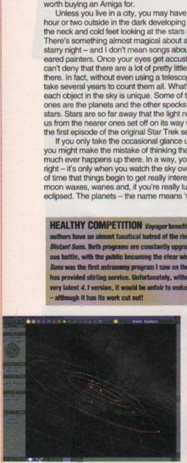
Rather like fractals, the closer you look at the sky, the more you can see. When viewed through a pair of binoculars or a decent telescope, more objects become visible. The bright planet Jupiter suddenly sprouts four lunar groupies, Saturn grows a pair of ears and the M25 resolves into an open cluster.

Voyager knows all this. It knows exactly where the planets will be, at any time. It knows all about 27000 stars and 3000 deep sky objects. It knows how to track comets, space probes and just about anything else. It supplies you with a superb virtual telescope. Plus, it knows that things get really interesting when they move.

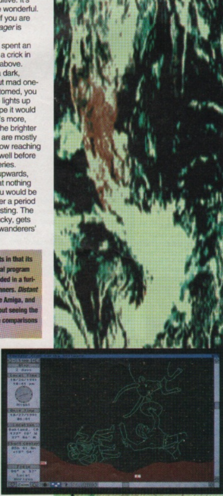
Voyager has a set of fast forward and reverse buttons, like a gigantic galactic video recorder. Instead of watching a frozen or even a real-time update of the sky, you can skip forward a minute, an hour, or a year almost instantly. Watch as the moon changes phase, a comet races across the sky or seasons alter the position of the sun in the sky – as seen in the film, 'The Time Machine'. Phenomena which are almost unnoticed normally can now be explored. For example, a problem which kept early astronomers guessing was why the planet Mars seems to perform a strange loop-the-loop path across the sky. To find out why this is so, we need to leave our home planet and do a little exploring...

EARTH AND BEYOND

Voyager doesn't just fix your location to Earth, though. You can move to the Moon, Mars, Venus or to any point in space. To solve our Martian problem, a position looking down at the inner solar system will suffice. Changing the setting to fast forward will draw out the



Real-time events can be zoomed into or sped up using single keypresses.



Step 2 days

Local Time 10/26/1991 10:41 pm

Night

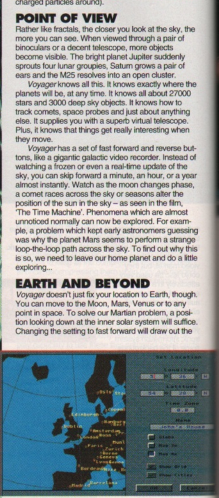
Univ Time 10/27/1991 06:41

Location Oakland, CA 122° 10' W 37° 46' N

Chart Center 05h 41.0m +18° 54'

Field 90° x 57° Local Horizon

Boosting its use as an educational tool, *Voyager* features all known constellations.



Set Location

Longitude 5° 36' W

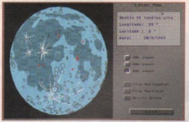
Latitude 54° 20' N

Time Zone 8.0

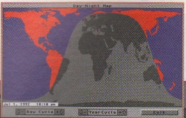
Name John's House

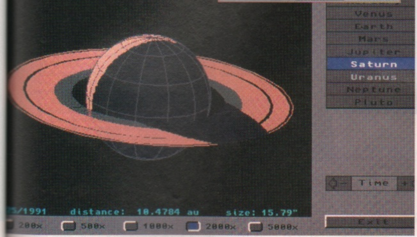
Your sky searching can be instigated from virtually anywhere in the World, allowing for countless views.

er



Such is the flexibility of the software, that the user can even locate the landing points of key space missions. Shown here, is the point Where Neil Armstrong became the first man to walk on the moon.





TELESCOPES AND EXTRAS Not content with drawing the sky, *Voyager* has a plethora of interesting extras still to come. For a start, there's a fully annotated map of the moon, compete with Apollo landing sites, a Galactic Map of the local star group, a fantastic animated Day/Night illustration and the ability to display digitised pictures linked to any object. Some of the example pictures of the planets and deep sky objects are amazing – and you can add your own images if you have a digitiser or scanner (and photographs).Some of *Voyager*'s best features only become apparent when you have access to a telescope. For example, the four major moons of Jupiter – called the Galilean moons – are plainly visable through even a small telescope. With *Voyager*, you can distingish between them easily and even watch as they pass behind and in front of Jupiter itself. If you're thinking about dabbling, the usual rule when buying telescopes is: don't. A proper one is far too expensive if you are about to take up the hobby. A good telescope will cost hundreds of pounds, and there are better ways to spend your money. If you are keen, start with binoculars. Nearly everyone has a pair of binoculars lying around the house, and they are perfect for looking upwards, as any halfway decent pair will have a large light gathering power. Not only will you see the moon in wonderful detail (remember to look at it when it's not full – you'll see lots more detail), but you can also check out the Galilean moons and look for those motorways in space – the M-objects (for the unitiated, the Messier Objects are a list of over 100 interesting galaxies, nebulae and clusters catalogued by the French astronomer Charles Messier in the 18th Century).

If you really want to use a telescope, try joining a local astronomy group. In Ireland (North and South), the Irish Astronomical Association are a bunch of swell guys, and have been known to lend equipment if you ask nicely. The British Junior Astronomical Association is also a useful group to know – don't worry about the "junior" bit, it doesn't mean 'under 18'. Personally I have always wanted to automate my own telescope. Imagine the setting – you highlight the star in question on your Amiga using *Voyager*. The last word must be never look at the sun through any form of optical instrument. It's not big and it's not clever. In fact it's very sore. Why do you think Patrick Moore squints like that?

solution for us: the orbit of the Earth is smaller and a lot faster than that of Mars, and so we seem to catch up and then overtake it – thus explaining Mars' odd orbit.

Some example settings are provided for your entertainment. For example, you can watch as Giotto spectacularly collides with Haley's Comet and gets James Burk all excited. Or you can visit the site of a solar eclipse. Or an eclipse of the Sun as seen from the Moon. I suspect if NASA had a copy of *Voyager* they wouldn't send up so many probes...

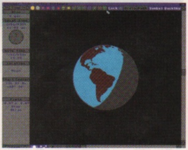
Before you can check up on what you'll see – clouds and street lights permitting – when you stick your head out of the window, you must set the time and date accordingly. If you're really lazy, it can be read from the Amiga's internal system clock. As what you can see depends just as much on where you are as what time it is, any astronomy program must provide a sensible way of setting these values. Entering your location by means of Latitude and Longitude is all very well, but *Voyager* goes one better and displays a globe for you to zoom in on and click on the required area. This ease-of-use is apparent throughout *Voyager* – it is a very polished program.

Voyager will then set about drawing your night sky on a hi-res interlace screen. The display colours have been carefully chosen, and on my monitor there was no noticeable flicker. If you wish to print out the screen, the colours can be reversed to save printer ribbon. You can also opt to have a 'realistic' display which shades the sky depending on the time. Of course, there is nothing to stop you entering other times and places. For example, I remember one Christmas morning there was a near full moon setting in the North. With *Voyager*, I was able to pinpoint the exact year.

I'm not sure whether *Voyager* will appeal to anyone not familiar with astronomy, but for a buff such as myself it is a fascinating piece of software. It's incredibly accurate and can produce stunning results with ease. Actually, contradicting my earlier statement, it could also prove to be the perfect entry to astronomy as a hobby, and is certainly cheaper than lashing out on a dodgy old telescope and never seeing the potential of such an interest. I have found this an invaluable piece of software and its accuracy never fails to amaze me, as a result I recommend you give it immediate attention – it's well worth it.

ADDRESS BOOK Contact HB Marketing on 0753 686000 for more info. The price hasn't been decided.

CU AMIGA TOP RATED



Past and future astral events can be witnessed by entering necessary dates and information for the computer to process. So if you remember, say, an eclipse from your childhood, you can pinpoint the exact date.

VOYAGER

. . . at a glance

- Runs on all Amigas with at least 1Mb and two drives (or hard drive)
- Makes use of extra chip ram for overscan display and extra graphics
- Extra data disks of stars and digitised pictures available
- One of the best education programs ever written

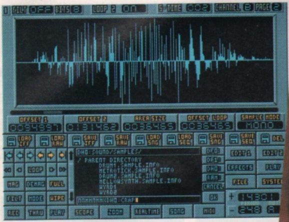
H B Marketing £N/A

Forget Sim Earth, this is Sim Universe. Superb stuff indeed!

EASE OF USE	95%
VALUE FOR MONEY	82%
EFFECTIVENESS	93%
FLEXIBILITY	89%
INNOVATION	90%
OVERALL	**95%**

beat studio

Darren James samples the latest release from City Beat. Has it got what it takes to leave the competition behind?



```
DH0:SOUND/SAMPLES/
/ PARENT DIRECTORY
        DRUM1.SAMPLE.INFO
        METROTICK.SAMPLE.INFO
        DRUM2.SAMPLE.INFO
        MELLOWSYNTH.SAMPLE.INFO
        WYRD1
        WYRD2
MMMMMMMXDH0:CRAP
```

The gadget-driven interface is difficult to use without a dedicated monitor, which is a bit of a shame because there are no hot-keys or menu selections so you have to be able to read all the text.

Beat STUDIO
City Beat

MORE THE MERRIER?

I can almost hear the collective groans of everyone reading this article: 'What? Another sampling package review?' Certainly, there currently appears to be a very wide choice of new hardware and software available, and the cynical amongst you may be inclined to stop reading at this point, having reached your limit as far as interest in articles about new sampling packages is concerned. But be warned! You may be missing a very interesting, well presented, informative, and may I say, definitive sampling package review.

This package from City Beat comprises the usual single floppy disk containing the sampling software, the usual sort of hardware which has come to be associated with Amiga samplers (a small flimsy plastic box which hangs off your parallel port), and the usual manual. So far, so nondescript then, with little to choose between this new package and the seminal *Mastersound* package – except that the *Beat Studio*'s flimsy plastic box has a rather surprising extra RCA phono socket on the back, making for a grand total of two, instead of the one, 3.5mm jack socket you may have come to expect.

This all too easily overlooked difference is a dead giveaway as to one of the most important features of this sampler – it's stereo! This cunning hardware feature is backed up by software which can create stereo samples from any stereo source (albeit at a lower sampling rate than is possible in mono mode), and can also create pseudo-stereo samples from a mono source. The connection lead supplied with the package has two phono plugs on one end and a stereo 3.5mm jack plug on the other – convenient for connection to the likes of personal stereos and the majority of modern HiFi equipment and it also proves extremely useful for connecting to the sampler unit itself – one of its most useful features.

ADDRESS BOOK
The *Beat Studio* package is available from City Beat, 182a Bedford Road, Kempston, Bedford MK42 8BL. If you're interested, it will cost you a mere £39.95

CONNECTIONS

The actual sampler itself appears to be rather flimsy and light, with the parallel connector cleverly mounted straight on to the circuit board. This is just perfect for those broken solder connections – I get a warm feeling inside, just thinking about all the great times I've had trying to fix multi-pin connectors with my 25W soldering iron and no solder. On the plus side, the parallel connector and the two phono sockets seem to be of good quality and, as long as you won't be connecting and disconnecting the unit too often, things shouldn't be too much of a problem. If you are, however, expect it to break. And remember – you can't fix multipin D-connectors with sellotape the way you can 3-core mains cable (not that we are suggesting that you should).

The manual quotes specifications of 57kHz in mono and 36kHz in stereo mode, both of which are more than acceptable for just about all Amiga applications, and the quality of the samples produced using the unit in conjunction with both the software supplied with it and other third-party software seems to be fairly good. In stereo mode, however, a much higher sample rate must be selected to ensure good quality samples than in mono mode, further increasing the memory/disk space overheads incurred by stereo sampling; but, then again, this is a feature the City Beat unit has in common with all stereo samplers.

SOFTWARE

The software supplied does just about everything you would expect the first sampling package you buy to do which, given the price of £39.95, makes it a seemingly ideal entry into the world of sampling. The software is capable of most of the usual effects processing – echoing, flanging, and looping. It can also process sounds in real-time, allowing the user to hear what their voice sounds like flanged, or with a ridiculous amount of echo (great for very sad, on your own, in your bedroom, Karaoke). A RAM Scan option allows you to 'Rip' samples out of existing software, by doing a warm reset and then booting up with the sampler.

'A-ha!' I hear you all say, 'this sounds like a pretty good deal'. Unfortunately, there is the slight problem where the software falls sadly flat on its face due to its almost but not quite complete lack of an Amiga-like front end. There are no pop-down windows full of lovely effects to choose from or save/load options to pick. There is no trace of anything remotely like a standard file-requestor, and no quick-access keys have been set up. Instead, you are presented with a screen that looks like the product of a Danish demo-writer on drugs. The text fonts are unreadable unless you're looking at them on all but the clearest of monitors, and the icons are packed tightly against one another. There is also a ludicrous menu selection system which involves lots of horrible little scrolling bars with lots of little illegible bits of writing on them. If a programmer takes it upon him or herself to produce a front-end radically different from the Intuition-based systems we have come to know and love (or hate if you're a Machine code programmer), it had better be an improvement. Unfortunately this isn't – it's a load of old rubbish.

In addition to this, the quality of the samples is not on a par with those created using the same hardware and a better, friendlier software package – *Audition 4*, for instance. It would appear then, that this package would be of more use to someone who already owns some decent sampling software but only has a mono sampler, than to someone wishing to take up sampling from scratch. If you absolutely, positively, have to run the software on the disk supplied with this package, make absolutely sure that no one even slightly critical of the Amiga, without the reasoning ability to judge between good and extremely bad software, sees you do it.

CONCLUSION

All in all, *Beat Studio* is a 'better-than-nothing' entry level sampling package, providing as it does everything you need to get started in the rough, tough world of Amiga stereo sampling. It's by no means the worst unit ever designed, but if you're really serious about sampling, it's probably better to splash out £50 and buy the GVP unit ; as well as better sound quality the software is considerably easier to use, too.

BEAT STUDIO
... at a glance

• 2 RCA sockets • Gadget driven interface • No hot-keys • Stereo • Hardware & software

CITY BEAT £39.95

Better than nothing at all – but not by very much...

EASE OF USE	15%
VALUE FOR MONEY	45%
EFFECTIVENESS	60%
FLEXIBILITY	63%
INNOVATION	10%
OVERALL	**36%**

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Temperature & Light Experimenters Kit £11.95
Thermo & Photo sensors which plug into the analog inputs. Software Inc. Print out a graph of temperature variation in your home. Save on fuel bills. The photo sensor could be used for a mobile robot (moves towards a light source).

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Access
VISA

DIGITALLY MASTERED SAMPLES

IFF SOUND SAMPLE LIBRARIES

Each disk is compiled from a **studio quality master** and is sampled on the Amiga at **twice the sample rate** of P.D. sample disks. They are compatible with all P.D. and commercial tracker and sequencer programs. N.B. no. of samples in brackets.

001 **AFRICAN** : Talking drums, Marimbas, chants etc. (53)
002 **INDIAN INST** : Sitars, Bansuri, Chants etc. (19)
003 **INDIAN PERC** : Tablas, Bayas, Rhythm Loops etc. (35)
004 **ARABIC** : Ud, Saz, Bendir, Rhythm Loops etc. (37)
005 **FAR EAST** : Tibetan Bells, Yangqin, Koto etc. (31)
006 **EUROPEAN** : Balalaika, Choirs, Bodhran etc. (34)
007 **OCEANIA** : Didjeridu, Chants, Slit Drum etc. (23)
008 **AMERICAS** : Kena, Berimbau, PanPipes etc. (30)
009 **FX PERC.** : Power Toms,Snares & Bass,Scratch & Rap. (88)
010 **DRUM KIT** : Bass&Snares,Hi-Hats,Cymbals&Toms (63)
011 **ANALOG PERC.** : TR-808, CR-78, Loops etc. (64)
012 **LATIN PERC.** : Timbales, Congas, Cabasas, Cowbells etc. (107)
013 **GUITARS** : Acoustic, Electric & Distorted etc. (41)
014 **BASS GUITARS**: Slap, picked, fretless, FX, etc. (44)
015 **ANALOG BASS** : Oberheim, Roland,Korg, etc.(28)
016 **DIGITAL BASS** : Yamaha DX, Roland, Korg, etc. (28)
017 **BRASS** : Sections, Saxes, Trumpets, etc. (24)
018 **SYNTH BRASS** : Analog, Digital &L.A. etc. (18)
019 **PIANOS** : Octave Splits, with strings,FX (16)
020 **STRINGS** : Cello, Orch. Hits, Sections, etc. (21)
021 **SYNTH STRINGS** : Analog & Digital (19)
022 **CHOIRS** : Mixed choirs, with bells & synth (16)
022 **ORGANS** : Church & Electric (17)
023 **BELLS** : Real & Synth, with Choir & Strings (20)
025 **SOUND FX** : Action Soands, Explosions, Gunshots, etc. (30)

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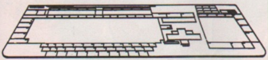

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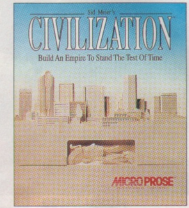

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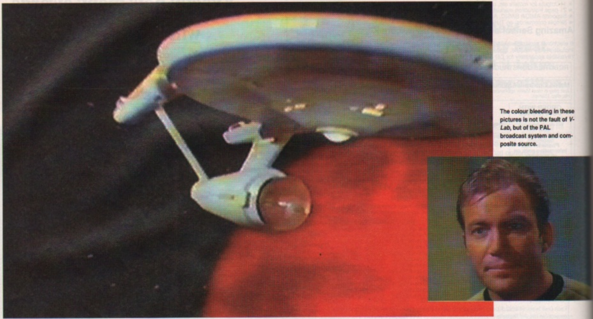


The colour bleeding in these pictures is not the fault of *V-Lab*, but of the PAL broadcast system and composite source.

v-lab 1.3

CU AMIGA TOP RATED

Nick Veitch examines a rather cunning new digitiser from Germany. Does it offer anything out of the ordinary? Read on...

HUMBLE BEGINNINGS

One of the most common ways of importing real-life art into your Amiga is via a digitiser. Unfortunately, with most people not being a Director of County Nat West, they are limited as to what they can use for an input source. Probably the most frequently used devices are a home camcorder or a video player. This presents something of a problem.

Most digitisers like to work by analysing the red signal, followed by the green, and finally the blue – all of which combine to make up the complete image. However, each of the sources we have mentioned produce a composite video signal, where all the colours are mixed together. There are ways around this and most of the established digitisers use either a cheap plastic rotating wheel or an electronic splitter. The disadvantage of this is that you have to then provide a fairly stable image – exceedingly difficult if you are using a camcorder.

Now, however, there is another way: *V-Lab* from Macrosystems. By digitising the complete YUV composite signal, the *V-Lab* card cunningly circumvents this problem. In this way all the colour information is stored at once and the Amiga can leisurely translate it into an RGB image to be displayed on your Amiga or saved out to disk as a 24-bit IFF.

THE THREE STAGES

The software which supports *V-Lab* is a kind of window-based random access playroom. In essence the sequence goes something like this.

First you grab an image with the 'scan' window. It pays to have the monitor running first, so you can see exactly what it is you are about to grab. Having scanned the image, it is now resident in memory as a digitized YUV file. This isn't much good though, because you can't actually see it. To get a quick idea of what exactly has happened you can get a preview. This is a sort of low quality rough and ready image which, whilst not actually good enough for use for any-

SEQUENCING The ability to grab images instantaneously is further enhanced if you can grab a number of frames in a sequence. Not only is this a bit cunning for use in some kind of stop-frame animation or those time-lapse shots showing flowers opening and Abbey National Cashpoint machines being JCB'ed, but it can also mean the difference between an excellent shot and a missed opportunity.

The sequencing control is very simple, but like so many simple things (and I'm thinking here mainly of our Ed.) it is very effective. Simple sliders set the number of frames, the time delay between frames and the scale to grab at (down to a tenth of original size – though most things are pretty unrecognisable at this size). The files will be automatically numbered and saved to disk or ram as YUV files. You can select the usual Hires, full-frame and colour options here, in the same way as in the normal scan window.

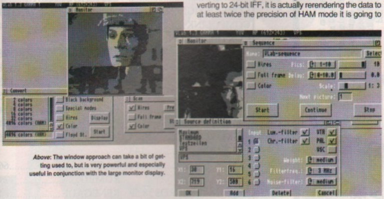
Of course, if you don't like the way the sequencing works, you can always write your own routine in ARexx.

thing, can nevertheless offer a good idea about whether you grabbed the exact millisecond of footage that you wanted.

Finally, in order to display the image, you'll need to use the convert window. You can convert your grabbed image into virtually any kind of Amiga displayable IFF. Because this requires quite a few calculations (half a million pixels to be converted into red, green and blue values) it could take about four minutes to render an image on a plain A500.

BITS

You won't be able to display a 24-bit image directly from *V-Lab*, unless you have a Harlequin Card (for which support is built-in), but there is an option to save out the image as a 24-bit IFF if you want to transport it to any other software or over to another computer. This can take rather a long time, though. Given that, when converting to 24-bit IFF, it is actually rerendering the data to at least twice the precision of HAM mode it is going to take twice as long – maybe over ten minutes. That's another good reason for being able to store the images in YUV format – you may not be able to look at them but at least you can batch process them later using an ARexx script. On a standard Amiga you will need to use the convert window to turn the image into a displayable IFF. It will work in virtually any colour mode you like, though I imagine that most people will want to use the HAM mode. You can of course output in 256 grey levels or any mono resoloution as well. Mono is usually a good testing ground for a digitiser. The colour information can blur any noise or bad referencing on a full 24-bit image, but a mono image is brutally plain. *V-Lab* performs pretty well, thanks to the inclusion of a source definition facility



Convert: 4096 colors (HAM)

Name: VLab-sequence

Pics: 1-10 — 10

Delay: 0-10.0 — 0.0

Scale: 1: 3

Next picture: 1

Source definition: VPS

X1: 30 Y1: 16

X2: 719 Y2: 580

Weight: medium

Filterfreq.: 3 MHz

Noise-filter: medium

Above: The window approach can take a bit of getting used to, but is very powerful and especially useful in conjunction with the large monitor display.

WHAT SOURCE

The source definition utility allows the user to custom design a set of filters and sizes for any video source you may wish to use. In fact, you might want to set up several variables for the same physical source depending on what type of material you are trying to grab . The gadgets allow you to select the channel, the x and y dimensions and their start-points as well as the filter settings. The filters can work on either or both the chrominance and luminance signals and can be tuned to anywhere in the 2.5-4.5MHz bandwith. With a little practise you can get as good an image with *V-Lab* and a 24-bit card as you could on any domestic viewing equipment.

ADDRESS BOOK

***V-Lab* is available here from Amiga Centre Scotland, Harlequin House, Walkerburn, Peebleshire, Scotland EH43 6AZ or call them on 089 687583**

CONCLUSION

At this price it is not only an astounding digitiser, but also an amazing bargain. Whilst it may take some time to find your way around the windows and work out which sequence to do things in, the flexibility afforded by this layout is well worth the extra effort.

The monitor feature is invaluable, but is a bit slow to be terribly accurate if you are trying to grab live action – still, that's what the sequencer feature is for. Overall the unit comes across as a sort of a Big Brother to Rombo's VIDI. The same facilities are there only more so, but you do have to have an upgraded tin-top to use the *V-Lab* (and it does a bit more damage to your wallet). The software is obviously going to be well supported as we have seen three updates in the time we have been reviewing the unit.

VLAB 1.3

. . . at a glance

• 24-bit IFF output • Quarter screen real-time 16-colour monitor • Advanced sequencing facility • Two RCA standard inputs • Accepts mono or colour composite video • 1500/2000/3000 board only • Works only with WB2.04 or higher

ACS £299

An excellent digitser – quite easily one of the best...

EASE OF USE	82%
VALUE FOR MONEY	96%
EFFECTIVENESS	94%
FLEXIBILITY	90%
INNOVATION	95%
OVERALL	**92%**

WHAT IS A DIGITISER? A digitiser is the visual equivalent of a sound sampler. The idea is to take a video image from a source such as a camcorder or VCR and turn it into an image which can be manipulated and displayed by the Amiga. To do this a piece of electronics known as an Analogue to Digital Converter is used. The ADC quantises the incoming signal and outputs digital information which can be recognised, used and stored by the computer. Some loss of quality is virtually inevitable since even if your computer system could display the image information at its full resolution it has still suffered from being digitised in the first place. Better digitisers use a faster ADC or one with a greater bit resoloution. Once you have a high enough speed and resoloution the loss of data is imperceptible (as in a CD player, which uses essentially the same data).

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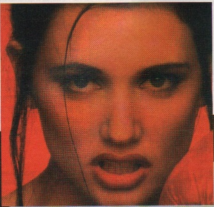
There is always a better way of importing images into your Amiga. Nick Veitch gets in the picture with Epson's latest wonder.

GT6000



Above left: Here you can see the effects of screening. The little diamonds are thrown up by an interference pattern between the scanning resolution and the original dot pattern.

Above: This is a mono image (black and white). The dithering gives the impression of shades. Some subject matter stands up better to this sort of treatment than others.

BITS ABOUT BITS Images are made up of bit-planes, a series of ones and zeros for every pixel on the screen. Obviously with one bitplane each pixel is either on or off giving you two colours. With two bitplanes you can have a total of four combinations of bits, giving four colours. The number of colours available is always 2 raised to the power of the number of bitplanes. The Amiga is capable of supporting six bitplanes, giving a total of 64 colours – HAM will allow a palette choice of 4096 colours by using trickery, which is theoretically 12-bit planes of data (or a 12-bit image). The Epson scanner scans at 24-bit colour resolution giving a monumental 16.7 million possible colours. You cannot display these images directly on a plain Amiga, you'll need a special graphics adaptor board. A 24-bit colour scanner can only produce an 8-bit grey image. This is because grey only occurs when the three component colours are at matching levels. Fortunately the eye makes a bigger deal out of shading than colour, so even with 8 bits (256 shades of grey) the resulting image is still quite stunning.

BETTER THAN LIFE?

Unfortunately, the *Epson GT6000* isn't the latest Jap tourer. Fortunately for Amiga fans, though, it is the latest in super professional-quality scanning equipment to be made compatible with the Amiga. There is nothing like a scan. The image provided by a high-quality scan is the closest thing you can get to hi-res photography on the Amiga.

As a way of importing real-life art into the Amiga it is second to none – the quality is much greater than that provided by a digitiser, for example. There can be nothing better than a nice sharp scan. The only difficulty is that a scanner is necessarily a fixed focus device, and the focus is fixed on the top surface of the glass – if it ain't flat, you can't scan it. This is not such a terrible blow. I know that about sixty to seventy percent of the things I generally want to import into the Amiga are flat – because they are usually pictures. There is no problem really – if it's flat you stick it under the lid; and if it's not flat, just take a photo of it.

QUALITY

The *Epson* is about as top of the range as you can go without having to go to the Building Society with a stocking over your head. Many newsstand magazines use equipment of a similar standard to the *GT6000*, so you can be sure that the results will be good enough for any project you have in mind. The scanner will work to one of 19 discrete optical resolutions, ranging from 50dpi (dots per inch) to 600dpi. This translates to a number of pixels for a given area, so obviously the higher the dpi, the sharper and more detailed the final image will be. There is another important resolution to worry about, though – the colour resolution. Sharpness is all very well, but a 600 dpi image in 4096 colours doesn't look as good as a 400dpi image with 16.7 million colours. The controlling software supports three colour modes: line-art, greyscale or colour. This simplifies the choice a little.

ART DEPARTMENT

This is where *ADPro* comes in. One of the files on the disk is a loader module for ASDG's *Art Department Professional*, the most established 24-bit graphics manipulation package on the Amiga. Having loaded an image into *ADPro* you can apply filters and save down to an Amiga displayable format, something you won't be able to do if you scan direct to disk. Essentially the software is exactly the same as the direct to disk option but obviously it loads the image directly into memory. Whilst faster this also means that you must have a few megs to load the image into (as well as 2Mb to run *ADPro* properly).

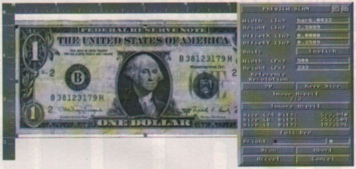
STRAIGHT TO DISK

The software that comes with the unit allows for direct scanning to disk. This is incredibly useful when you realise that an A4 image scanned at 600dpi in 24-bit colour comes to a grand total file size of just over 143Mb! Try installing that on your RAM board. Scanning is done in two stages (or should be for the best results). First, a preview scan is taken. Usually this is done at the lowest resolution (50 dpi) which still gives you a pretty good idea of what the finished image will look like. The preview scan is displayed as a scaled monochrome image on screen. At this stage you can drag the selection lugs around to scan only a certain part of the image. You may wish to get another preview if you are trying to capture only a small area of an A4 page. The software will automatically select a suitable scanning density and after scanning redisplay the new scan of the area just selected, plus a margin of about 10% all the way around in case you want to adjust outwards. Once you are happy with the area you have selected it is time to move onto the scan view proper.

➤

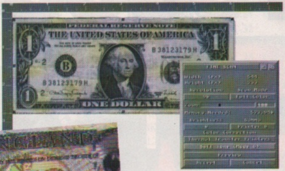
GT6000

TRANNIE SCANS Many photographers supply transparencies rather than prints because they give greater definition and resolution across a range of colours. Of course, much of this is lost if you have to get them made into prints, never mind the hassle and expense of such a process. The way around this is to scan direct from the transparency using a special adaptor unit for the scanner. Just throwing a trannie under the lid won't do any good because you need to project light from behind them, not bounce it off their surface. An adaptor unit will be available for the GT6000 in September, but whether the software will be updated to support it remains to be seen.



PREVIEW SCAN
Width (In) 6.0432
Height (In) 2.5889
OffsetX (In) 0.0000
OffsetY (In) 0.2589
Units English
Width (Px) 544
Height (Px) 233
Reference Resolution 90
Keep Size
Image Aspect 7:3
Ignore Aspect
Size (24 Bit): 523,948
Size (8 Bit): 253,584
Size (4 Bit): 142,596
Full Bed
Bright 0
Scan
Abort
Accept
Cancel

Above: The preview screen gives you more than just crop marks to go by. This shaded image is automatically scaled to fill the screen with any part of the image area you have selected.



FINAL SCAN
Width (Px)
Height (Px)
Resolution 90
Scan Mode Full Color
Zoom 100
Memory Needed:
Brightness 0
Gamma Printer
Color Correction Thermal Transfer Printers
Preview
Accept
Cancel

Left: Unfortunately, in final scan mode there aren't many controls to allow for colour correction or descreening.

DOING IT FOR REAL

When going for the final scan, a second option screen comes up. This allows you to select the colour mode and one of three dithering or colour correction modes depending on whether you are scanning in colour or monochrome mode. There is also a selector gadget for the resolution and a zoom bar. The resolution displayed is for the finished image, so if you are scanning at 50dpi with a zoom of 50% you are actually scanning at 25dpi in terms of the original piece of artwork. This means that when operating on a positive zoom (more than 100%) you are actually scanning at a higher dpi than that shown.

A 50dpi image can still look fairly good in 24-bit colour.

IN USE

The *GT* is a well built and more than adequately featured scanner. The direct printer link makes it possible to use it as a colour photocopier with no computer required, which is the reason for all the touch-sensitive controls and displays on the front. For some reason, whether it be a fault in the software or in *ADPro* itself, it never seemed possible to directly convert a greyscale image to an Amiga displayable mode without saving it to disk and loading it back in again. Weird.

ADDRESS BOOK The scanner is available from Epson for £999. The ASDG software driving module was supplied by HB marketing and is priced £129 .95. Unfortunately there seems to be nowhere you can buy a complete kit including cables, but you can ring Epson on 044 26114 and HB are at Unit 3, Poyle 14, Newlands Drive, Colnbrook SL3 0DX. Tel: 0753 686000

CONCLUSION

The most annoying thing about this scanner is not the scanner at all, but the software. When you have paid out such a large sum of money for the hardware you expect the software support to be up to scratch but it isn't. The colour correction, descreen, and interpolate options from professional scanner drivers on other machines are simply not there. The most annoying omission is the descreen option. This prevents the annoying interference patterns that occur whenever you try to scan a previously screened image, such as anything printed in a magazine for example. The module will run well in *ADPro* and even supports extension of the ARexx ports to allow control of the scanner, but it is let down badly by the lack of control over the input. The same scanner with better software would be a match for any similarly-priced system on any computer, but as it stands it is left second best.

You can down convert your images for specific uses. This dollar bill has been reduced to a 16-colour image in *ADPro*.

EPSON GT6000
. . . a t a g l a n c e

- Colour and mono modes
- Direct scan to print
- Scan to disk option
- *ADPro* module support
- 50 to 600 dpi resolutions

EPSON £999

Nice scans, shame about the software support...

EASE OF USE	84%
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EFFECTIVENESS	96%
FLEXIBILITY	65%
INNOVATION	80%
OVERALL	**81%**

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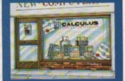

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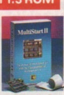

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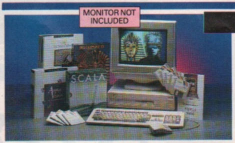
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PP 046	DECAY: SWEET REVENGE	(1.5mb) Stunning Coyote vs Runner
PP 047	GOTTA GO	(1.5mb) Good but so slow!

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PG 151	FLAG CATCHER	Avoid the bomb game
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In the final part of our comprehensive Bubblejet round-up, John Allinson looks at two machines aimed at the professional user. In addition, he rounds off with a guide to getting the most out of your chosen machine...

PART 3

HIGH-END PRINTERS

£600 AND OVER

These are the creme-de-la-creme of the Bubblejet family – and this is reflected in their prices! Do they offer enough to justify their high cost, though?

HOW WE SELECTED THE PRINTERS

Our comparison test is designed to bring you practical, objective information on Bubblejet printers, which are increasingly popular because of their high print quality, lack of noise, and general value for money.

The two printers we've selected are both priced at over £600, but can be picked up for less if you shop around. Each printer was tested with several programs to gauge how well it worked with standard Amiga software, its ease of use, speed and the quality of print.

DMC CALAMUS
DMC CALAMUS

BROTHER HJ770

The only wide vehicle on test

Testing this machine was not a pleasure. It took an hour of staring at the manual before I could understand how to change the DIP switch configurations and the innumerable settings that can be made from the control panel. A poorly written manual did not help: in fact the machine is quite straightforward to use once everything is set up.

This printer has a whole host of options: four different emulations (HP DeskJet, Brother, Epson LQ and IBM), six internal typefaces (Roman 1 & 2, Sanserif 1 & 2, Brougham, Letter Gothic) and numerous print enhancements (shadowed, reversed, outlined, shaded).

The HJ770 is a wide carriage (A3) printer, the only one tested – this explains its high price. It comes with tractor feed and single sheet arrangements, and there is a cut sheet feeder available. There are two slots for memory or font cards.

➤

hubble bubble

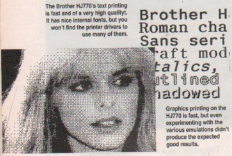
360 into 300 doesn't go, at least that is my conclusion after using this machine in its DeskJet mode. The HJ770 is a 360dpi printer, the DeskJet produces 300dpi: for the one to emulate the other takes some mathematical jiggery-pokery in dot positioning which doesn't really seem to work. All my DeskJet mode graphics printouts had tartan patterns on what should have been even areas of tone. The Epson mode graphics were better, and the text was fine.

VERDICT: BROTHER HJ770

Fast and good value, but difficult to get to grips with...

DESIGN	65%
CONSTRUCTION	80%
EASE OF USE	65%
PRINT QUALITY	75%
SPEED	85%
FLEXIBILITY	80%
INSTRUCTIONS	50%
VALUE FOR MONEY	65%
OVERALL	**70%**

The Brother HJ770's text printing is fast and of a very high qualityt. It has nice internal fonts, but you won't find the printer drivers to use many of them.



Brother H
Roman cha
Sans seri
raft mod
talics,
utlined
hadowed

Graphics printing on the HJ770 is fast, but even experimenting with the various emulations didn't produce the expected good results.

SMALL PRINT

Price (RRP ex vat) £749
Ink cartridge (1,000,000 chars) £13
Sheet feeder £145
Serial interface £100
Memory card £170
Font cards £95
Manufactured by Brother (UK) Ltd. 071-387 5060

EPSON SQ870

This one comes with scaleable fonts and is simple to use

This is a monumental beast: big, heavy and impressive – and is certainly the noisiest machine tested. It is plainly designed as an all-purpose office machine, with tractor and single sheet feed, optional second tractor and cut sheet feeder.

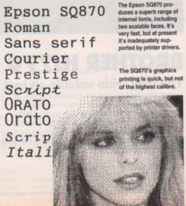
I had no problems in setting up and using it: the small collection of DIP switches is conveniently placed on the front, as is the on/off switch – by the way, why do so many computer and printer manufacturers think that we enjoy groping round the back of their machines to get at the mains switch? The control panel is clearly laid out with ample indicator lamps to show what is happening: typefaces and print pitch can be selected from here.

The range of internal typefaces is large – Courier, Prestige, Orator, Roman, Sanserif, and two scripts (italic fonts). Most of these are only available in one size but the Roman and Sans Serif can be used at any size between 8 and 32 points.

Scalable fonts have been available for laser printers for some time, but not, until now, for inkjets. The printer fonts on the other machines are in one or two fixed sizes only; a scalable font should print perfectly at any size within the specified range. This makes for a very flexible and versatile system. The drawback, at least as far as Amiga owners are concerned, is that there is no WP at present which can access the SQ's scalable fonts – the printer drivers are not available.

This printer is fast, both for text and in graphics mode. Its large print buffer also means that when printing text the computer is free sooner than any of the other machines.

Although the text quality is very good, the graphics output isn't so hot. At present you can't realise anything like the full potential of this machine with an Amiga. Shame.



Epson SQ870
Roman
Sans serif
Courier
Prestige
Script
ORATO
Orato
Scrip
Itali

The Epson SQ870 produces a superb range of internal fonts, including two scalable faces. It's very fast, but at present it's inadequately supported by printer drivers.

The SQ870's graphics printing is quick, but not of the highest calibre.

GROUP SUMMARY

Surprisingly, these aren't as good as may have been expected. Perhaps a laser is a better idea...

Impressively fast and full of functions, these machines are designed for the office. Although the Brother performs well and is cheap for what it offers, the SQ870 is better designed and much easier to use. It is also relatively more expensive – the wide carriage version of the Epson (the SQ2250) costs nearly £200 more than the Brother. (The cheapest wide carriage Bubblejet is the Canon BJ330 – a stretched BJ300).

Consider one of them if you need to produce page after page of invoices with little fuss. If you want to do DTP work, a laser printer won't cost much more and will achieve better results.

VERDICT: EPSON SQ870

Fast, simple-to-use, very well engineered, with excellent fonts

DESIGN	90%
CONSTRUCTION	90%
EASE OF USE	85%
PRINT QUALITY	80%
SPEED	85%
FLEXIBILITY	80%
INSTRUCTIONS	80%
VALUE FOR MONEY	70%
OVERALL	**80%**

SMALL PRINT

Price (RRP ex vat) £659
Ink cartridge £29
Sheet feeder £189
Serial interface £36
Manufactured by Epson (UK) Ltd. 0442-61144

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- +915 MISSILE COMMAND
- +916 AMEOBA INVADERS
- +917 ROLLERPEDE, INVADERS
- +918 AMIGA DRAGON TILES V2.5 ....Great tiles game
- +919 ZEUS
- +920 HOLLYWOOD TRIVIA
- +922 THE SIMPSONS
- 925 WIZZY'S QUEST
- +926 THINK TWICE ....Master Mind
- +927 HYPER-BALL ....Arkanoid clone
- +929 SEALANCE ..Submarine Sim, Good
- +930 SHAPES ....Good for Kidz
- +931 WACKO Jr In Wonderland
- +934 SCRABBLE
- +935 WORMHOLE
- +936 ANAGRAMS
- +939 SKY FLYER
- +940 GALACTIC FOOD FIGHT
- +941 ATIC ATAC
- +942 D-TRIS (TETRIS)
- +943 ARCADE CLASSICS inc space invaders
- +944 NU THE SHOOT EM UP Great stuff
- +945 CARD GAMES lots
- +947 E-TYPE The best Asteroids clone, NEW

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As it says the ultimate virus protection disk has got to be the best virus killing collection to date. Has so many virus killers, it's unbelievable.

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A great collection of sampled sounds for you to add to your music creations. Can be used with MED and all others. Very good quality.

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By a German artist, a great tutorial showing you how to produce great logo's and fonts using Deluxe Paint III, or IV. Great value. You'll be an artist in no time!!

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THE GREATEST MUSIC MAKER
+ 4 DISKS
FULL OF INSTRUMENTS, BEATS etc . . .
TO GET YOUR REMIXES GOING!!
£6

CATALOGUE +

+ 2 DISK CATALOGUE +

LISTS ALL OUR DISKS, HELP FILES, TIPS, LETTERS, MUSIC GAME CHEATS, TECH INFO

+ 856	PRINTER DRIVERS	CAN'T GET THAT DARN PRINTER TO WORK??? HELP!
+ 797	TYPING TUTOR	MEASURES TYPING SPEED AND ADJUSTS LEVEL OF DIFFICULTY
+ 799	CLERK	FANTASTIC ACCOUNTS PROGRAM FOR BUSINESS OR HOME
+ 839	DESKTOP PUBLISHER	MAKE LEAFLETS etc WITH GRAPHICS + TEXT GOOD
+ 857	SUPERKILLERS	KILLS SADAM PLUS 171 MORE VIRUS'S LATEST
+ 840	TEXT PLUS V3.0C	WORD-PRO MENU DRIVEN AREXX SUPPORT THE BEST
+ 808	P.C. EMULATOR	RUN P.C. SOFTWARE IT WORKS COME WITH C.G.A. GFX NEEDS MS-DOS
+ 810	PASCAL COMPILER	IF YOU ARE UP THERE WITH THE BIG BOYS GET THIS
+ 710	AMIBASE	POWERFUL EASY TO USE DATABASE WITH 4 MATHEMATICAL FUNCTIONS
+ 858	JR-COMM 1.02	THE LATEST VERSION OF THIS COMMS PROGRAM GOOD
+ 784	C MANUAL V2	4 DISKS ALL YOU NEED TO LEARN 'C' CONFIDENTLY
+ 704	NORTH 'C'	UNPACK ONTO 2 DISKS COMPLETE 'C' ENVIRONMENT
+ 859	SOMETHING FOR NOTHING	2 DISKS VIDEO UTILITIES + FONTS SERIOUS
+ 860	N-COMM V1.92	THE LATEST VERSION OF THIS GREAT COMMS PROGRAM
+ 676	SID V1.06	THE LATEST!! CLI IS A BLAST WITH THIS ONE
+ 688	DISK SALV	MUCH MUCH BETTER THAN DISKDOCTOR ON W.B
+ 681	BATTLEAXE ICON STUDIO	THE TOP ICON MAKERS AND EDITOR WITH SOME ICONS
+ 682	PRINTER DRIVER GENERATOR	YOU WANT A PRINTER YOU NEED A DRIVER
+ 683	D.K.B. TRACE	EXCELLENT RAY TRACE PROGRAM
+ 711	LEARN & PLAY	2 DISKS, GOOD YOUNGER TUTOR
+ 700	CLIP ART A.B.C.D.E	5 DISKS BEST IFF PICS FOR DTP ETC
+ 650	QUICKBASE, LABELPRINT, VIDEO-LIBRARY, MENU	1 DISK GOOD VALUE
+ 703	GRAPHIC UTILITIES	TOTALLY PACKED WITH GRAPHIC STUFF
+ 781/2	DYNAMITE FONTS 1 & 2	2 DISKS FULL OF FONTS TO USE IN DPAINT ETC
+ 761	MEGA UTILS	50+ YES OVER 50 USEFUL UTILITIES
+ 725	ANTIFLICKER	STOPS SCREEN FLICKER IN INTERLACE MODE
+ 787	HARD DRIVE UTILS	INCLUDES MR. BACKUP AMONG OTHERS IS GOOD
+ 885	AUDIO MAGIC V1	FULL OF USEFUL MUSIC SEQUENCERS & SOUND RIPPERS
+ 886	AUDIO MAGIC V2	IF YOU HAVE THE ABOVE, YOU'RE BOUND TO WANT THIS
+ 887	PROGRAMMING 1	FULL OF USEFUL HINTS TIPS ETC FOR ALL LANGUAGES
+ 888	DEVPAC SOURCE CODES	LOTS OF PROGRAMS FOR YOU TO EXPERIMENT WITH
+ 889	SPECTRA PAINT	A FULL WORKING PAINT PACKAGE, IFF, USE BRUSHES AND MORE
+ 890	GELIGNITE FONTS	MORE GREAT LOOKING FONTS TO USE IN YOUR PAINT PACKAGE ETC
+ 891	MIDI UTILITIES	A GROUP OF UTILITIES TO USE IN CONJUNCTION WITH A MIDI KEYBOARD
+ 892	MESSY SID II	AN UPDATE TO THIS GREAT FILE CONVERTER, AMIGA <> PC
+ 804	ASSASSINS PRINTER UTILS	MANY PRINTER UTILITIES, LABEL PRINTERS etc
+ 844	LITTLE BENCH 2.0	A GREAT WB REPLACEMENT, WITH LOTS OF USEFUL UTILITIES
+ 845	ANTI-VIRUS V42.0	!NEW! GREAT PLUS COMPATIBLE VIRUS KILLER
+ 846	MAGNETIC PAGES	MAKE YOUR OWN MAGAZINE ON DISK, OR TUTORIAL etc
+ 1001	MED V3.2	THE VERY LATEST AND BEST MUSIC PROGRAM
+ 1002	ESSENTIAL UTILS III	A GREAT COLLECTION OF UTILITIES
+ 1003	ASSASSINS MEGABOOT	MASSIVE COLLECTION OF BOOT-MAKERS
+ 1004	MR BACKUP V5.02A	BACKS UP YOUR HARD DISK IN MINUTES
+ 1005	FREE COPY V1.4	REMOVES THE PROTECTION FROM GAMES
+ 1006	AMIGA PLUS UTILITIES	SPECIALLY FOR THE A500 PLUS
+ 1025	LABELBASE V3.00	STORE NAMES & ADDRESSES, AND PRINT ADDRESS LABELS
+ 1026	NCOMM 1.921	BEST COMMS PROG + HOST OF ARCHIVING FILES etc
+ 1027	DCOPY V2.0	GREAT D-MOB COPIER, FORMAT, NIBBLE COPY, DOS COPY+ & MORE
+ 1029	HYPER CAT V1.2	STORE 9999 DISKS/PROGS, BY NAME OR DISK NO.
+ 1032	GENERATES GREAT MAPS	INCLOUDING NATIONAL BOUNDRIES, SAVE AS IFF etc
+ 1038	PIC BASE	SPECIAL DATABASE FOR STORING IFF PICS, VIEW THEM etc, KEEP TRACK OF YOUR ART

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ABSOLUTELY FULL OF GREAT TUTOR PROGRAMS, INCLUDES: FRENCH, GERMAN, SPANISH, GEOGRAPHY, MATHS & MUCH, MUCH MORE.
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+ GAMES PACK +

The best have been put together. Over 20 great PD games all picked to be the best at the current time. All Plus compatible
£6

+ DESKTOP VIDEO PACKAGE +

This pack has been made due to the great demand for this type of material. It consists of: Smovie the text scroller, 2 disks full of backgrounds & fonts, & 2 disks full of Video Application utility software. To be used with Genlock etc.
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DEJA VU

PROFESSIONAL SOFTWARE
£3.50 PER TITLE. AUTHOR GETS ROYALTIES

+LPD22	**LC10 FONTS**: New fonts for your Star LC10/LC200 printer.
+LPD31	**CLI PRINTER DUMP**: Prints a screen dump of the screen display.
+LPD34	**INVOICE PRINTER**: Quick production of invoices on your paper.
+LPD35	**T-TECHDRAW**: Technical drawing program with print facilities.
+LPD36	**FRACGEN II**: Great fractal program generator.
+LPD44	**FORMULA 1 CHALLENGE**: A great racing car game.
+LPD47	**DIRTY CASH V1.06**: The best fruit machine wen on the Amiga.
+LPD52	**LC24 FONTS DISK**: New fonts for you to download to most 24-pin printers. Very good.
+LPD65	**POWER PLANNER**: Personal organiser, keep track of things.
+LPD66	**HOTEL MANAGER**: A great board game, quite similar to that old classic Monopoly (1Mb)
+LPD71	**BATTLECARS**: Racing game - commercial quality - highly recommended (1Mb)
+LPD75	**VIDEO LAB**: Simple to use video titling package for home video's. Great quality.
+LPD77	**POWERBASE 2.1**: Powerful database with a host of features.
+LPD79	**MUSIC ENGINE**: Plays music created in MED, Soundtracker etc. NEEDS AMOS (1Mb)
+LPD81	**POOLS PRO**: Program to help you fill in your pools coupons.
+LPD86	**NCOMMAND V2.03**: Adds workbench 2.0 like displays to AMOS programs - very impressive. (1Mb) NEEDS AMOS.

Price increase from July 1st on Deja Vu. Call first.

LATEST

- +916 TETREN (I'M HOOKED ON IT)
- +949 REVENGE MUTANT CAMELS (AV)
- +950 15 GAME DISK ASSASSINS
- +951 TOTAL WAR
- +952 YUM YUM
- +953 BATTLEMENTS
- +[illegible] TRAINSET (POOR)
- +893 AMIBASE PRO (LATEST)
- +894 UEDIT WORDPRO (LATEST)
- +895 AMICASH (BANK ETC)
- +899 P. SUIT (DISK CAT MAKER)
- +1050 SURVIVE ROLE PLAY
- +1051 ESCAPE
- +1052 BEAST (DIFFERENT)
- +1053 HARDWARE HINTS A
- +1054 HARDWARE HINTS B
- +1055 QUADRIX (5 STAR GAME)
- +1056 CROSSWORD CREATOR
- +1057 QUESTION TORT (QUIZ MAKER)
- +1058 AMIGAZER (ASTRONOMY NUTS)
- +1059 GRAPHIC CONVERTORS (FORMATS)
- +1060 MEGA MON (NEW RIPPER)

AM/FM +

AM/FM is a recently started disk mag for Amiga users who are musically interested. It covers all aspects of using the Amiga for sound and music production, bringing News, Reviews, Gossip, Tutorials as well as 3-4 selected Amiga only songs, 3-4 Midi songs and 2-5 selected Sound/Music utilities in each issue. Created by some 20 professional musicians including Bjorn Lynne and Teijo Kinnuenen
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+ indicates also A500 Plus Compatible

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A MUST FOR HOME BUSINESS

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PACK TWO

DEMO PACK (10 Disks), Budbrain 1 (2 disks), Budbrain 2, Scoopex "Mental Hangover", Palace "Pulling the Trigger", Quartex "Substance", Phenomena "Interspace", Decay "Simpsons Demo"
GREAT STARTER PACK

– £12.00 –

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This is Licenceware and costs £3.50 per disk

LPD	02	ARC ANGELS MATHS - Educational (P)
LPD	03	GALLEONS - Sailing ship combat game (1MB) (P)
LPD	05	JUNGLE BUNGLE - Childrens adventure. Icon driven-Totally superb! (1MB) (P)
LPD	08	WORK & PLAY - 3 Great educational games for kids - Very Good! (1 MB) (P)
LPD	10	WORD FACTORY - Great spelling game for kids! (P)
LPD	11	GO GETTER - Super quality Board game (1 MB) (P)
LPD	14	PLAY IT SAFE - Excellent program for teaching safety to young children (1 MB) (P)
LPD	15	ARC ANGELS SHAPES - Remember Fuzzy Felt? (1 MB) (P)
LPD	17	DOGFIGHT II - Aerial combat for up to 8 players (1 MB) (P)
LPD	19	X-IT-50 - Very good puzzle game (P)
LPD	20	WORDY - Good word processor - simple to use
LPD	21	QUINGO - Quiz game which plays bingo! (1 MB)
LPD	22	LC10 FONTS - includes font creator (P)
LPD	23	E.S.P. - recommended game! (P)
LPD	24	SHINING WAY OF KUNG FU - super quality Beat-em-up game on 2 Disks (1 MB) (P)
LPD	26	C.Y.A.D. - Brilliant puzzle game! (1 MB) (P)
LPD	27	FLOWER POWER - Good kids game (1 MB) (P)
LPD	28	BIG TOP FUN - Top quality educational game (1 MB) (P)
LPD	32	HARD DRIVE MENU
LPD	33	ADVENTURE TOOLKIT - create your own adventures (1 MB) (P)
LPD	34	INVOICE PRINTER - Excellent utility! (P)
LPD	35	T-TECDRAW - Produce & print technical drawings (1 MB) (P)
LPD	37	ROCKET MATHS - Good educational game (1 MB) (P)
LPD	39	MAGIC FOREST II - Addictive platform game (1 MB) (P)
LPD	44	FORMULA ONE - Highly recommended game (1 MB) (P)
LPD	45	MUSIC BOX - Music tutor for age 7+ (1 MB) (P)
LPD	46	MAGPIE CLIPART - Over 300 original images (P)
LPD	47	DIRTY CASH - the best Fruit machine (1 MB) (P)
LPD	50	MAGPIE CLIPART 2 - more original pictures! (1 MB) (P)
LPD	51	MAGICAL YOUNG ARTIST - Super colouring book for youngsters, over 30 pictures ! (P)
LPD	52	LC24 FONTS DISK (P)
LPD	53	MAGPIE CLIPART 3 (P)
LPD	54	MAGPIE CLIPART 4 (P)
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LPD	59	PREHISTORIC FUN PACK - Dinosaur games and puzzles - recommended (1 MB) (P)
LPD	60	TECHNO-SNAIL - Platform game (1 MB) (P)
LPD	62	REVOLUTION - Fun game for 4 players (1 MB) (P)
LPD	63	MAGIC FOREST III - Another good platform game (1 MB) (P)
LPD	65	POWER PLANNER - Personal organiser (P)
LPD	66	HOTEL MANAGER - Board game a la monopoly (1 MB) (P)
LPD	68	VIRUS BUSTER v2.1 - Very user friendly (1 MB) (P)
LPD	70	PAINT BOX - Another for the kiddies (P)
LPD	71	BATTLE CARS - Racing game commercial quality - highly recommended (1 MB) (P)
LPD	72	MONSTER ISLAND- R.P.G. for children (P)
LPD	75	VIDEO LAB - Video titling package (P)
LPD	76	TEC MAZE - For puzzle solvers (1 MB) (P)
LPD	77	POWERBASE v2.1 - Very professional (1 MB) (P)
LPD	79	MUSIC ENGINE - Plays music created in MED, Soundtracker, etc. (1 MB) (P)
LPD	81	POOLS PRO - Predict pools wins (P)
LPD	82	COLOURING BOOK 2 - long awaited sequel (1 MB) (P)
LPD	84	GUESS WHO? - Hangman using digitised pictures of famous people (1 MB) (P)
LPD	85	MAGIC WASSOCKS - Amusing platform game (1 MB) (P)
LPD	86	NCOMMAND v2.03 - Adds workbench 2 like displays to AMOS programs - very impressive (1 MB) (P)

UTILITIES

PDU	10	Worprocessing & Databasing (P)
PDU	16	Air Tunnel simulation (P)
PDU	32	Fish # 144 Analytic S sheet (P)
PDU	43	Fish # 203 Assembler & C (P)
PDU	51	Fish # 219 Astronomy program
PDU	99	Ham Radio Utilities (5 disks) (P)

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✔ 24 HOURS DESPATCH
✔ FIRST CLASS DELIVERY

CATALOGUE DISK

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MEGA
P D DiRECT
BLITZ

PACK THREE

MUSIC PACK (10 DISKS), Vision Music Masters, Crusaders "Bacteria Music", Crack Music Disk, Jetset Overload Music, RAF Megamix No 1, Flash digital Concert No 6, Flashing Bytes "Sweet Songs 1", Alcatraz "Panic voices", Crusaders Micro Concert, Archaos Music Disk.

– £12.00 –

PACK FIVE

MUSIC MAKERS (P)
MED 3.20, Pro Tracker, Star Trekker v1.2, 3-Songs Disks 4-Instrument Disks
A MUST FOR HOME MUSICIANS

– £12.00 –

PDU	101	Menu Maker
PDU	102	Label Designer (P)
PDU	103	Icon Maker (P)
PDU	104	Icon Mania (P)
PDU	151	Fixdisk (P)
PDU	164	Games music creator (P)
PDU	169	Quick-Base (Database) (P)
PDU	186	Falcon Bootblock creator (P)
PDU	207	Perfect Sound v1.93 (P)
PDU	262	MED modules (P)
PDU	358	Tetracops (P)
PDU	366	IBM Emulator (P)
PDU	367	Atari ST Emulator (English version) (P)
PDU	368	Spectrum Emulator v1.2 (P)
PDU	369	Fish # 579 C64 Emulator
PDU	370	Flexibase (Database) (P)
PDU	371	Nuke v1.36 (Saddam killer) (P)
PDU	374	Quick-Draw v1.2 (P)
PDU	377	M-CAD (Design program) (P)
PDU	378	Transformer v3.3 (IBM Em)
PDU	381	C-Light (Ray Trace Utility) (P)
PDU	380	TEXT PLUS v3.0cm (Edit Crunched Files) (P)
PDU	375	MED v3.20 (With MIDI) (P)
PDU	382	MESSYSID II (P)
PDU	383	SPECTRAPAINT v3.2
PDU	384	DISKMASTER v3.2
PDU	385	ELECTROCAD v1.4 (P)
PDU	386	AMIGAFOX v1.1 (English Version DTP) (P)
PDU	387	WINDOWSBENCH v1.0 (2 Disks)
PDU	388	600 BUSINESS LETTERS (P)
PDU	389	B-BASE II (Excellent, Fast Database)
PDU	390	TEXT ENGINE v3.0 (Incl. Text wrap and spell check) (P)
PDU	391	FORMS REALLY UNLIMITED (P)
PDU	398	AMIBASE PROFESSIONAL II (Database) (P)
PDU	399	D-COPY (v2.0, v1.0 with Docs) (P)
PDU	402	GOLF RECORDER v1.0
PDU	403	NORTHC (2 Disks) (P)
PDU	404	HAMLAB v0.91 (IFF Convertor) (P)
PDU	405	AMP1.2 (Amigaspell, X-spell, U-Edit, UES) (P)
PDU	407	OPTI UTILITIES # 1 (P)
PDU	408	OPTI UTILITIES # 2 (P)
PDU	409	GELIGNITE FONTS (Professional Fonts) (P)
PDU	410	SUPERSOUND II (P)
PDU	411	IMPLODER v4.0 (P)
PDU	412	HARD DRIVE UTILITIES (P)
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hubble bubble

BEST OF BREED?

So what, in our opinion, is the best overall Bubblejet? Read on... There are no duds here, and the quality of printed text is very good across all of them. Graphics printing quality is more variable, while the speed is roughly proportional to the price.

CHEAPEST – baby Canon/Brother/Star. (The Olivetti has the lowest RRP but isn't discounted quite as much.)
BEST BUDGET PRINTER – baby Canon/Brother, Olivetti JP150
FASTEST – Epson SQ870
BEST BUILT – Epson SQ870
MOST PORTABLE – baby Canon/Brother/Star
MOST CONVENIENT (without buying optional extras) – HP DeskJet 500/Citizen Projet/Fujitsu B200
BEST FOR WORD PROCESSING – HP DeskJet 500/Canon BJ300
BEST FOR DTP – HP DeskJet 500
BEST ALL ROUND for value, speed and quality – HP DeskJet 500

Three Steps To Heaven...

1 PLUG IN AND GO

We all want a printer that we can bring home from the shop, take out of its box, and connect to the Amiga with the minimum of fuss. There are a couple of considerations...

WIRING IT UP

You can make the actual computer-to-printer connection in two ways. On the back of your Amiga are two sockets marked 'Printer' and 'Modem'. These are also known as the parallel (or Centronics) and serial ports; either can be used to hook up a printer, although many printers these days only have a parallel socket. The internal connections of these ports are different, they work in different fashions, and they need different cables.

In a parallel cable there are eight wires for transferring data – eight 'bits' of data can be sent to the printer at the same time (in parallel). Only one wire is used for data in the serial connection, so the transfer is limited to one bit at a time and is correspondingly slower. This difference is especially significant where large amounts of information have to be sent – when printing graphics, for example. The disadvantage of parallel connections is that if the cable is longer than 1.5–2 metres the signals may become weak or corrupted. Serial cables can be much longer (up to 30–40 metres), and they're a little cheaper.

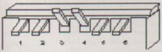
Apart from slower data flow, the problem that people have with serial connections is in trying to get the computer and printer to talk to each other properly. You have to make a variety of settings with your Amiga's Control Panel accessory and the DIP switches to adjust the rate of data transfer and how it's controlled ('handshaking') – they can be troublesome to get right.

It's best to avoid serial printer links. The parallel route is much simpler to use, and cables don't need to be specially made up for the Amiga.

DIPPING YOUR TOE IN

I've always harboured a deep hatred of DIP switches. They are the little switches that are sent from hell to ruin your day. They're invariably hidden in the most inaccessible part of your printer which is devilishly annoying as they are used to set up your printer's operations. They are more properly known as 'dual in-line package switch assemblies', hence DIP. If you ever have to spend half a day trying to find them you may have your own little 'pet' word for them.

Usually there is a bank of about a dozen, sometimes more and this is what they look like in their earthly guise.



A set of DIP switches, known optimistically as a bank.

Printer manuals are generally very bad at explaining in clear English what they do. Typical gobbledygook is: 'DIP switch 1 has eight data switches and eight bits are assigned to these switches (bit 1 through bit 8)'. This is a serious problem: your printer may have lots of clever functions that you can never discover because you can't understand the manual.

Typically, DIP switches control the printer emulation, use of the parallel or serial port, character set, paper length, sheet feeder on/off, the codes sent to signal the end of a line of text, and more. My advice is 'don't fiddle'. Try out the printer and, if it doesn't do what you think it should, then refer to the manual (or your dealer, or the printer manufacturer's help line) to fathom out the necessary changes. Several of the printers we've reviewed don't have DIP switches – I regard that as a great step forward.

2 EMULATION IS THE SINCEREST FORM OF FLATTERY

One of the best things about your particular printer is that it can transform itself into another make. . .

The major printer manufacturers (Canon, HP, IBM, Epson) have set standards that others follow. If you read that a printer has 'Epson emulation' it doesn't mean that its physical design is based on an Epson model (though it may be); it refers to it being able to receive and understand the language that is sent to an Epson printer.

We all want a printer that we can bring home from the shop, take out of its box, and connect to the Amiga with the minimum of fuss. There are a couple of considerations...

When a word processor is sending a file to your printer it has to send not only the characters of the text, but also other special sequences of characters which tell the printer how it should be printed. It's by sending these sequences (known as control codes) that such things as switching bold or italics on and off, or changing to a different type size are done. You sometimes see these codes referred to as 'Escape' codes – 'Escape' being one special character which often comes first to tell the printer that what follows is a command rather than something to be printed.

It would be too simple if there were one standard set of codes. An Epson printer (or one that uses Epson emulation) will use different codes from an HP printer to do the same thing, WHEREAS an IBM will use something else again.

Fortunately, not every printer manufacturer has invented their own code system: most use or modify standards set by the big four. Even so, it can be difficult to match your software to your printer.

Your word processor, graphics or DTP program will come with a selection of printer drivers. You have to select one which will match your printer. The driver is an additional piece of software that translates what the program wants the printer to do (font changes, etc) into codes that the printer can act on. Word processor printer drivers are usually text files which you can modify yourself; the necessary codes will be found in the reference or programming section of the printer manual. Editing printer drivers is not for the faint-hearted, but with trial, error and time it should be possible to get any printer working with any program.

The drivers for graphics or DTP programs (which send data to the printer about the position of each dot on the page) are almost always binary files – incomprehensible to the human eye. They can only be changed by the programmer, but if you are having problems, or think that your printer isn't performing as it should, ring the software company.

3 EXPANDING YOUR PRINTER

Here's how to get into some really advanced printing

All of the printers we've looked at, as the various tables have shown, have a variety of optional extras – a sheet feeder being one of the most useful of these. I certainly prefer a sheet feeder and if you're using the printer for business then the sheet feeder is an absolute must.

There are several things you can do if you don't like the internal fonts on your printer, or want a special typeface. The simplest, but not the cheapest, option is to buy a plug-in font card or cartridge. Most cards have several additional typefaces which you can use either by changing settings on the printer or by sending commands from your word processor. The two problems here are that your word processor may cancel font changes you make on the printer's control panel, and it may not have the special printer drivers to let you change fonts from within the program. Make sure that you will be able to use them fully before buying what could be a fairly expensive white elephant.

A cheaper way is to 'download' fonts to your printer. Fontswitch is the best known program for doing this on the Amiga. The additional fonts are stored on disk and the program lets you send one from there to be stored in the printer's memory and used instead of the usual printer font. The advantage of this system is that Fontswitch is an inexpensive utility and the range of public domain fonts that you can use is large, cheap and constantly growing.

You'll have noticed that many printers have optional memory expansion cards. There are two reasons why you might want to get one: to increase the available room for downloading fonts and to enlarge the print buffer size. When data is sent to the printer it fills up the printer's memory area (known as the buffer); as printing proceeds the memory gradually clears, leaving room for more data to come from the computer. With a large memory buffer in your printer, your computer will be able to finish sending the data long before the printer has had time to print it. You will be able to get on with something else and the printer will go on happily churning out the contents of the buffer till the job is done.

Although a big buffer will free up your computer more quickly when printing text, it will have no effect when printing graphics or DTP work because the volume of data to be sent is so enormous. You would need a buffer of several megabytes to make a difference here.

Don't rush to buy more printer memory just because it's there, though. Many word processors can use an area of the computer's memory as a buffer, and there are accessories which will let you do this if your WP doesn't. This will save you from any unnecessary expenditure. All that remains now is to wish you luck...

PUBLIC DOMAIN PDSCENE

Steve Keen takes another exhaustive look at the latest PD releases and sorts the wheat from the chaff. If it isn't reviewed here, then it's not worth buying...

GRAPEVINE ISSUE 9

disk magazine

The latest issue of LSD's disk-based magazine was released earlier this year. As usual, the mag brings together a host of different topics and discussion points, from an interview with Team 17's Alister Brimble, to views on piracy, a cluster of coding tips, science fiction pieces, and just about anything you could imagine. There's even articles on phone tapping and the question on all wrestling fans lips – is the sport fixed? A great couple of disks which are packed with information and aren't bogged down with computer jargon and boring topics. One of the best mags I've seen and definitely the most fun.

Disk no: 1891 A&B Available from: 17 Bit, 1st Floor Offices, 2/8 Market Street, Wakefield, WF1 1DH Price: £1.50 per disk (including P&P) Tel: 0924 366982

90%

GRAPEVINE · 9

THINK TWICE

puzzle game

Think Twice is a quality clone of an all-but-forgotten board game, Mastermind. The multi-coloured plastic peg puzzler was originally licensed from the TV quiz series of the same name, but had absolutely nothing to do with the question and answers format we've all come to know. Instead, it involved two players, one of whom had to place a series of coloured pegs behind a screen, and the other guessing their order. It was basically a game of trial and error, but it was still fairly addictive. The games came in a number of different sizes, including a pocket version to take on trains which was more of a contribution to the game's success than anything else. The big advantage of this computer version is that you can play on your own. The rules are identical and it still knocks the spots off most other puzzle games. Michael Haibich and Diethard Pabel, the programmers, have recreated the board in all its original detail, to add a touch of nostalgia for those old enough to remember it. Although the format

.

Disk no: 926 Available from: Battle Axe PD, 125 Kingswood, Thorpe Marriott Norwich, NR8 6UW Tel: 0603 261060

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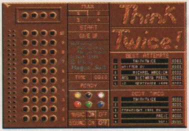

FRIDAY 13th PART 2

animation

Definitely not intended for those with a nervous disposition comes this collection of digitised animations taken from the Friday The 13th films. The excerpts are spread over the whole of Jason's career (the series' psychotic star), and not just from the second extravaganza as the title suggests. Each flick runs for a few seconds before looping and are guaranteed to make you squirm. The digitised sequences are superb and, rather than showing Jason's victims, they depict the loony getting his comeuppance.

Disk no: 1881 A&B Available from: 17 Bit, 1st Floor Offices, 2/8 Market Street, Wakefield, WF1 1DH Price: £1.50 per disk (including P&P) Tel: 0924 366982

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WHAT IS PUBLIC DOMAIN?

Welcome to the Public Domain where there's a wealth of free software available for your Amiga – often as good as, if not better than, a lot of full-price commercial programs. For the price of a disk and a little money to cover such things as postage and packing, you can take your pick from a stack of great games, utilities, demos, animations and applications.

The origins of Public Domain go back to the early days of computing when groups of enthusiasts would get together and create original programs of their own. These they would distribute freely between friends to garner recognition for their coding skills. Nowadays, the PD scene has grown into a thriving industry with countless PD libraries serving an ever-growing number of enthusiasts. Standards are rising all the time. PD Scene is here to make your purchasing decisions that much easier as we individually rate all the best new releases as well as provide details of the full cost of each disk (including postage and packing) and the address of where to send your cheques/postal orders. Don't just sit there, start writing those cheques now!

SANITY: YESTERDAY

music demo

SANITY
YESTERDAY
USE JOYSTICK TO MOVE UP AND DOWN

Here's one of the best-presented music demos we've ever turfed out of the post bag. The intro is worth getting the disk for alone. There are six tracks on the disk which are selected by rotating a spinning stone column. The titles of the tracks are written on the column's sides, and you must keep turning it until the desired track comes up. It then scrolls forwards and loads almost instantaneously. By moving the joystick, information about the source of all the samples used in the tracks is displayed as the songs play. The quality of the samples is excellent and very professionally put together, but the selection of tunes could have been a lot better.

Disk no: 1892 Available from: 17 Bit, 1st Floor Offices, 2/8 Market Street, Wakefield, WF1 1DH Price: £1.50 (including P&P) Tel: 0924 366982

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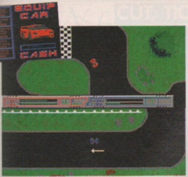

BATTLE CARS

game

Upon loading, *Battle Cars* looked a promising little game. Colourful presentation, plenty of options, and good, effective-looking sprites. The game makes no apologies for being a *Supercars* rip-off, and looks identical in places. Taking control of a single racing car, you are awarded money for every race you win. This can then be spent on turbo chargers, weapons, tyres, power-steering or armour-plating as you see fit. There's no prize for second place, so every race must be won if you want to get anywhere. I say it looked promising, as once you attempt to play it you realise just how infuriating these games tend to be. *Battle Cars* suffers from dodgy controls and, as a result, it's essential to buy power-steering as you won't get anywhere without it – a real pity as this could have been a fabulous game. The process of dispatching weapons whilst driving is another pain in the backside, as trying to negotiate the hair pin bends and fend off the car behind proves impossible. A great deal of practice might make things better, but if your prepared to spend a whole weekend on it you're a better man than me.

Disk no: LPD71 Available from: 17 Bit, 1st Floor Offices, 2/8 Market Street, Wakefield, WF1 1DH Price: £1.50 (including P&P) Tel: 0924 366982

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PICK UP A PUZZLE

puzzle game

If you thought that picture puzzle fans were confined to the bed-ridden or infirm, think again! Puzzle fans number in their hundreds of thousands and few of us casual pundits can resist placing down a few pieces when passing someone else's picture. This disk contains five separate pictures to complete over three difficulty levels and include city scapes and African plains. By pressing the mouse button you can change the piece you have to place and come back to it later.

Disk no: G75 1+2 Available from: Deltrax 36 Bodelwyddan Avenue, Old Colwyn, Clwyd LL29 9NP Tel: 0492 515981

78%

PICK UP A PUZZLE!

E-TYPE

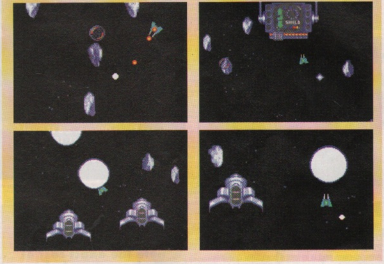
game of THE MONTH

arcade game

No it hasn't got anything to do with *R-Type*, but yes it is a space shoot 'em up. *E-Type* could quite possibly be the best PD game yet. Written by a cunning Derbyshire lad by the name of Mat Hall, the game is in the same mould as *Asteroids* with a touch of *Project X* thrown in. Things start off simply enough with a few rocks drifting through space, but instead of having to split the meteorites into pieces before facing the next wave you must collect a host of bubbles and jewels which float randomly between them. These pick-ups provide extra energy which is added to your health bar at the top of the screen, and when this crosses the entire width of the play-field you're warped to the next level. Other levels consist of different sprites and a collage of variable-sized asteroids, drones, and spaceships. Just to make things even more fun, a second type of bubble – engraved with a 'P' – provides four power-ups including extra lives, shields, and two separate weapons. These don't last forever, though, and can run out at the most inopportune times. Extremely addictive and especially well presented, I recommend that you buy it now so you can register for Mat's other games and possibly an upgraded version of this.

Disk no: 947 Available from: Battle Axe 125 Kingswood, Thorpe Marriott, Norwich, NR8 6UW Price: £1.25 (including P&P) Tel: 0603 261060

94%



DOCTOR WHO

demo

A topic worthy of attention, but I'm not sure if this is the best way of displaying it. The Doctor in this case is the Tom Baker model who's been digitised along with his old side-kick, K9. The disk includes sixteen pictures from the story 'The Invisible Enemy', and is accompanied by a truly abysmal tune: 'Contact Has Been Made: The Invisible Mix' – the inaudible mix more like! There are some great Tom Baker expressions, though, and the small pictures do stir up some fond memories of the long-scarfed one's adventures through time and go some way to proving that he was one of the best Doctors – but when is the series coming back? Until it does, this disk is one for collectors only, I'm afraid.

CONTACT HAS BEEN MADE
THE INVISIBLE ENEMY MIX

Disk no: 1788 Available from: 17 Bit, 1st Floor Offices, 2/8 Market Street, Wakefield, WF1 1DH Price: £1.50 (including P&P) Tel: 0924 366982

78%

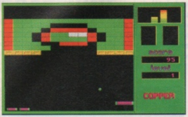
COPPER

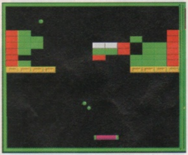
game

Copper is yet another version of *Breakout*. All the features are here: multiple balls, multiple brick busters, speed ups and others. The bricks all have their own sounds when hit and a graphic equaliser beats along to the sound as the ball ricochets off the different coloured surfaces. The bat's ball detection is a bit suspect, but if you haven't already got a version of this classic then why not add this one to your collection?

Disk no: 1907 Available from: 17 Bit, 1st Floor Offices, 2/8 Market Street, Wakefield, WF1 1DH Price: £1.50 (including P&P) Tel: 0924 366982

78%





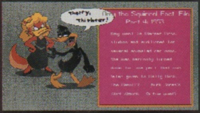
THE HISTORY OF AMY

slide show

Someone in their infinite wisdom has decided to produce a slideshow of Eric Schwartz's Amy the Squirrel. I say 'someone', because I can't believe that Eric himself would put out such a disappointing demo after the reams of classic animations he's released to date. The disk is presented as a sort of retrospective with various bits of fictitious information on how the forest dweller started out in 'The Business'. A kind of 'This is your life' affair is the best way to describe it with assorted tales of the squirrel's career. Gasp as you hear of Amy's alleged relations with Walt Disney and Tex Avery. Snarl as she is passed over by Warner Brothers for Daffy Duck. Swoon as her bit-parts for Hannah Barberra draw her to the attention of the big producers and eventual stardom. Come on Eric, please tell me you didn't do this and that it's all a publicity stunt for your next feature. This is dull, dull, dull! Only worth getting if you've got a thing about semi-domesticated rodents with curvaceous bodies!

Disk no: 1905 Available from: 17 Bit, 1st Floor Offices, 2/8 Market Street, Wakefield, WF1 1DH Price: £1.50 (including P&P) Tel: 0924 366982

72%



Amy the Squirrel Fact-File
Part 2: 1931

PURITY TEST

entertainment

Quite a new thing to see over here on the British PD scene. *Purity Test* unashamedly wreaks of Americanism and is in fact a computer questionnaire based on the nocturnal and daylight habits of consenting adults. The disk covers eleven topics such as Platonic Relationships and Style, of which you pick the ones you wish to be quizzed about. Then, after facing a barrage of about twenty-five questions, the computer gives you a standard chip-generated verdict, from a library of many, on your performance. All good fun, but some of the questions are pretty hairy and a lot of them are way past the mark. If you're easily offended, we suggest you stay well clear of this one as it's strictly for borad-minded adults only. Those without scruples will find it a hoot! It's certainly a fave in the CU offices.

Disk no: 1901 Available from: 17 Bit, 1st Floor Offices, 2/8 Market Street, Wakefield, WF1 1DH Price: £1.50 (including P&P) Tel: 0924 366982

85%

PURITY TEST

PURITY TEST

PLEASE NOTE: Some releases come on more than one disk so please note the exact cost of each program before sending off any cheques or postal orders.

PD TOP TEN

A-Animation S-Sound U-Utility G-Game M-Miscellaneous S-Slideshow

1. **E-Type G**
2. **A Day At The Beach A**
3. **Copper G**
4. **Icon Maker U**
5. **Think Twice G**
6. **Microbes G**
7. **Sweet Revenge A**
8. **Guess Who? G**
9. **Escape G**
10. **Lemmingoids G**

Compiled by CU Amiga

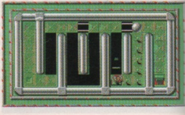
ESCAPE

arcade game

Escape is an incredibly addictive game that requires a subtle combination of quick thinking, puzzle solving and dexterity. Each stage necessitates pacing your way around a tiled playing area hovering in space. Each level requires you to open sliding doors that lead to the next exit by standing on selected tiles. Take care though, as most tiles are cracked and if you loiter too long you'll fall through and be lost in the void. Every round is against the clock which makes for some frantic game-play and rash moves that'll make you keep coming back for more. On some levels a giant metallic ball blocks your path as it rolls Indiana Jones-style through the corridors. Classic stuff.

Disk no: 2236 Available from: Crazy Joe's, 145 Effingham Street, Rotherham, S65 1BL Tel: 0709 829286

90%



CUT, TICK & POST.....CUT, TICK & POST

Telephone or Fax Hotline (0702) 466933

PD Soft (CU38) 1 Bryant Ave, Southend-on-Sea, ESSEX, SS1 2YD

VARIOUS UTILITIES

☐x **V13 PLAY & READ (2)** A collection of education programs for the under 7 year old's.
☐x **V16 FISH TANK SIMULATOR** A program that simulates an aquarium. Visually pleasing.
☐x **V28 WORD WRIGHT & AMIGA SPELL,** Contains over 9,000 words & more words can be added.
☐x **V41 DPAINT ART** Conatins loads of pictures for you to mess around with. Loads into your Dpaint.
☐x **V48 TV & VIDEO GRAPHICS (8)** Packed with background screens for your video productions, Different types of graphic styles. **Peel,** takes an IFF Picture & peels it down the screen, & Much More.
☐x **V86 VIDEO PRODUCTION (2)** Both disks are Packed with video & Genlock utilities.
☐x **V109 PRINT STUDIO** Excellent for printing pictures or text. An excellent program for all printer owners.
☐x **V191 MASTER VIRUS KILLER** Virus Checker & Killer. With Excellent options. Includes search disk.
☐ **V193 THE EMULATORS** Covers Various **(2)** Formats which includes **CPM. IBM-PC & ST** Require 2 drives.
☐x **V194 M.R.BACKUP HD** An excellent Hard disk back up program. Backs up all or any part of the drive.
☐x **V195 GRAPHIC INTERCHANGE** Interchange graphics Between Atari St/PC Graphics to the Amiga.
☐x **V215 DISKMASTER v3.2** Copies files from one disk to another. **DISKSALV** Corrects & repairs.
☐ **V261 TEXTPLUS VERSION 3.0** This disk is not just an update but completly New Word processor.
☐x **V262 DUPLICATION & BACKUP:** Super Duper,Turbo copy, Sanity copy & PCopy. Four new copiers to backup your originals for save keeping.
☐x **V277 FORTRAN-77 v1.3c** Compiler, linker & run time support library. F470
☐x **V279 CROSSWORD CREATOR** A program that creates crosswords. UPDATED VERSION.
☐x **V284 MCAD PROGRAM** The Object Drawing Program for the Amiga.ie CAD
☐x **V285 EDUCATIONAL : TYPING TUTOR** A Simple typing which measures your speed on the keyboard.
☐x **V298 NORTH C v1.3 (2)** The most famous C: language on the Amiga, Encludes all files required.
☐x **V301 EYE OF THE BEHOLDER HINT BOOK** Inc Introduction, Background, Maps, Strategy & Solution.
☐x **V304 CHAOS STRIKES BACK HINT BOOK** Inc Introduction, Background, Maps, Strategy & Solution.
☐ **V306 A-GENE v3.125** Lastest version of the Family Tree program. Reviewed in CU Amiga.
☐x **V323 ANALTICALC SPREAD SHEET (2)** This is the best spread sheet program to date on the Amiga.
☐ **V330 RED SECTOR EXTRAS DISKS (2)** On this disk are 32 point Fonts, 16 Point fonts, vector stats, Star fields & music Space Journey Lorna. By The deadzone Troopers.
☐x **V332 AMIGA PUNT PROGRAM** Predict which horse will win with this horse prediction program.
☐ **V338 TRANSFORMER v3.3** This is the Latest version of the IBM Emulator disk. Require an MS-Dos disk.
☐x **V339 SPECTRUM EMULATOR DATA DISK 1:** Adventure Classics needs v216 or v443
☐ **V340 TSB VECTOR DESIGNER** The Special Bothers presnets The TSB Vector designer **v1.1,** This program will create filled vector objects, line vectors & Bobs.
☐x **V341 CLIP ART COLLECTION 2:** Eight more disks fully packed with excellent clip art. **(8)**
☐x **V350 BUSINESS CARD MAKER** Design your own Business cards on the Amiga.
☐x **V354 FREECOPY** Removes protected games copy protection so that the user can install them on his/her hard disk.
☐ **V365 RED SECTOR MODULES (MUSIC) :** Various music modules for use with the RSI Demo Maker.
☐x **V366 600 BUSINESS LETTERS** There are over 600 Standard business letters on this disk. Can be used as they are, or insert some parts into your own letters/text.
☐x **V390 THE DESK TOP PUBLISHING PROGRAM** The first amiga PD Desk Top Publishing program. Includes various extra features over the old Word processor, Test Editor, Graphics editor & loads more.
☐x **V392 AMICASH BANKIN** The best bankin program that I have ever used on the Amiga. easy controls.
☐x **V394 CHEMESTETICS** A program that draws molecules using the calotte model. Excellent effects.
☐x **V401 WINDOWBENCH v1.0 (2)** An excellent Workbench II replacement for all v1.3 users. Recomended.
☐x **V410 PDS UTILITIES No 1: PRINTING UTILITIES** PPType, PPShow, ABFD, View, Tiny Print, **FASTJET,** A program for Deskjet 500 users you want to use the resolution enhanced graphic set. **GWPrint II .**
☐x **V413 WORKBENCH 2 & WORK STATION** This is not just another workbench clone. It's a collection of utilities with the Workbench theme. **(2)**
☐x **V415 VIDEO SCREENS:1** Excellent back ground pictures for video production work. Nice back drops.
☐x **V417 SUPERBENCH & EXTRAS (2)** An excellent replacement disk with more utilities than the original WB
☐ **V420 CURSOR BASIC COMPILER** Compile any Amiga Basic program with this utility disk.
☐x **V423 C: COMMANDS** This disk is filled with utilities which can be used in Startup-sequences
☐x **V424 PDS UTILITIES No 18** Utilities include, **Anti-flicker** program, Said to stop the flicker in High Res. **ST Emulator** Program to turn your amiga into an ST.
☐x **V431 IMPLODER v4.0** Reduces file size for sorage on hard drives our your own collection disks.
☐x **V433 ANIMATION STUDIO** An excellent Animation creator for you to make your own.
☐x **V439 AMIGA C: MANUAL II** This manual is the complete C: manual for the Amiga & describes open & work with all parts of the C: system. It also contains various examples, some simple & some morecomplex all the way through the disks a tutorial is there to helb you out. **(4)**
☐x **V443 SPECTRUM EMULATOR v1.2 By KGB** Main updated feature is it now has sound ability.
☐x **V444 PRINTER DRIVER UPDATE DISK III** Now contains instructionon how to install them. All previous drivers included on this disk. Over 90
☐x **V445 JRCOMM v1.02** This is the latest version of the excellent modem based computer program.
☐ **V463 SUPER C: COMMANDS** The disk is not as full as some others but comes with full instrustion.
☐x **V475 P.SUITE v1.4** A collection of programs called **P.Write,** a simple word processor, **P-Draw & P-Render**
☐x **V479 CHESS & CHESS UTILITIES** A collection of chess related Puzzles, Programs & Utilities.
☐ **V484 ADVETURE SOLUTIONS (2)** Another good collection of adventure solutions for various games.
☐x **V489 AMIBASE PROFESSIONAL II** The latest updated version of the excellent Database progam. now includes various excellent new features.
☐x **V490 MESSY SID II** This is the latest version. It will read MS-Dos disks and tranfer any text files to & from the PC disk / Your Amiga. So you can do work on an IBM or an amiga and swop text between them.
☐x **V493 DESKBENCH (3)** This is an excellent workbench replacment with special utilities.
☐x **V497 BEATRIX POTTER CLIP ART** An excellent collection of clip art for any DTP program or Dpaint.
☐ **V498 THIEF SOUND RIPPER v3.0** Finds Sidmon 1, 2 (Midi), JHam cracker, future Composer, Sound monitor, Noise/Protracker, Startrekker, Delta, sound system, David Whitaker & Noisepacker.
☐x **V499 STAR CHART v1.2** This is an excellent star plotting program with some intresting features.
☐x **V509 *MED* v3.2** This is another update to the Ultimate sound music Editor program.
☐x **V515 THE A64 PACKAGE v2.0 (2)** A very complete C 64 Emulator Actually runs faster that 64. Runs 64 basic. Transfers disks from your original 64 disk drive with a shareware lead.
☐x **V517 VIDEO & AMIN : VIDEO_DB,** A program for keepin track on your video tape collections. **RTAP,** Lets you play large Anims on small Mem machines.
☐x **V518 IMAGE LAB** Performs many effects from simple averaging to fast fourier transforms. **Tools On Tap,** Does fades, colourbars & gray bar generation.
☐x **V519 STILLSTORE** Used to create over the shoulder graphic inserts like the 9'0 clock news.
☐x **V520 GRAPHICS : AGRAPH,** Creates colourfull pie, bar and line graphs. **PICBASE,** Shows reduced versions of all your IFF pictures. ** Requires V522
☐x **V521 PLOTTING & GRAPHICS: PLOTXY,** A powerful full featured plotting prog. **PLANS,** A computer aided drafting prog.** Requires V522
☐x **V522 ARP V1.3 : Conman v1.4,** Makes many im-provements to AmigaDos & makes your system easier to use. Includes full users developers guide.
☐x **V523 DICE C COMPILER (2)** Matthew Dillons full feat-ured powerfull C compiler & enviroment system.
☐x **V525 LABEL MAKER v1.3** An excellent disk printing program with various new features.
☐x **V529 FRACTAL & SCULPT 4d: Tree 4d,** Creates sculpt 4d trees with leaves. Contour 4d, IFSGen & Plasma
☐x **V530 BUDGET** A program to help managing personal finances. This is a update to disk V280.
☐x **V536 CATALOGUE UTILITIES** A collection of utilites used to Catalogue disk/ Video/ Tape collections **(2)**
☐x **V543 DISK STATION (2)** An excellent workbench replacement with built in utilities like Sid and others
☐x **V546 KIDS PAINT** A painting program designed for children. Includes various colours and speech.
☐x **V549 ELECTROCAD v1.4** Another Updated on the cad drawning preview written in Amos.
☐ **V550 KEFRENS POWER UTILITIES : NewTopaz, Power Fonts,** Create, Edit or change any 8x8 or 16x16 fonts. **Window,** Change size of dos windows.
☐ **V554 R.S.I. MUSIC MODULES 2/3** Another selection of music from Red Section. **(2)**
☐ **V556 RED SECTOR HELP DISK** Another disk to help you use the Red Sector Demo Creator.
☐ **V560 DUPLICATION & BACKUP II** A collection of copiers like amigaCopy, Coder copy, Pcopy, Rattlecopy.
☐x **V567 PRINTER DRIVER GENERATORS** A selection of utilities with various excellent Printer Driver Generators.
☐x **V569 DUNGEON MASTER MAPPER** A littletool that creates maps of dungeons (and eventually towns) which can be used by a DM for use in a AD&D game.
☐x **V570 CHRIS HAMES UTILITIES : DIRWORK v1.51,** Excellent file copier simulal to diskmaster & Sid but contains more commands to hand. Recommend.
☐x **V571 WHOM II v2.02 (2)** An update to the Dr.Who database program. Gives all info on Dr.Who progs
☐x **V573 FILE & HARD DRIVE MANAGEMENT (2) : HDCLICK v2.0,** A program selector to make Hard disk Menus. Starts with gadgets.**FILE MINDER,** Utility for maintaining files & Directories. **DOSCONTROL,** Tool that combines the functionality of many separate tools.
☐x **V575 HOME BUSINESS PACK (6)** An excellent selection of utilities based on word processing, Data Management, Spread Sheets, Accounts & Printing.
☐x **V581 PDS PRINTING No 3 : PRINTER DRIVERS,** HP Deskjet 500 & 500 Colour, Canon BJ10e, BJ130, BJ300, Nec24p, Oki24p, 39p, Star24p, Panasonic9, Seikosha9. **HPMODE,** For use with Deskjet 500
☐x **V582 DB** A Database with upto 50 fields,max of about 1.2 million records. **CLICKDOS II,** An Amiga Dos enhacement utility. **FILEFIND & SUPERVIEW v3.0**
☐x **V583 ICONEDITOR III v2.0,** Can create Icons upto 640x200 pixels. **DOCTORICON v1.0,** Imports images as icons, Edit & Create any Amiga icons.
☐x **V584 EDUCATION : FASTFACTS,** Everything you ever needed to know about the solar system. **WORLD MAP,** Produces diffenent sorts of world maps. **PLANETS,** instant locations of plants. **MATH MOUNTAIN**
☐x **V585 ARCHIVERS** A selection od most archivers, like LHArc, Zoo, LHWarp, Pak, LZ, PKAZip, Zap, Zippy.
☐x **V586 FONTS & C: COMMANDS : DISKSALVE,** Repairs damaged disks. **SWEEP,** Free unUsed allocated memory.. **FONTASSIGN,** Assigns fonts to the SYS path.
☐x **V587 GELIGNITE FONTS (2)** A selection of fonts for use with any DTP Package or Dpaint disks.
☐x **V593 TEXT ENGINE v3.0** Another excellent word processor program Simple but will do the job
☐x **V598 DATABASE WIZ** This program will record all your Names & Address. Easy Database program.
☐x **V599 BBASE II v5.3** This disk is one of the most well known database program. Recommend.
☐ **V603 POOL FORCAST v1.0** Perm-Check is designed to check football plans for winning lines (1Mb)
☐ **V604 PD COPY v3.0** New disk copy with some extra commands & quick copy modes buit in. (1Mb)
☐x **V605 PRO CALC v1.0** Offers the C or Machine code programmer a 68000 or FFP calculator when is use. (1Mb)
☐ **V606 SAMPLE MAKER v1.0** This works specially for those who are not able to make samples with a sampler.
☐ **V607 PRO TRACKER v2.0** Written by Lars Zap Hamre. Another update to the Ultimate sound making program.
☐x **V610 GOLF SCORES v1.84** It's will record each round you play, Store it, make up an eclectic score NEW! You can also show graphs of scores & performance against par. NEWER! It will now work out stableford points.
☐x **V611 FOOTBALL LEAGUE EDITOR v1.0** Want to update your teams league position as the results come in
☐x **V620 ASPICE v3.2** Circuit Analysis, A full featured program for electric circuit analysis.
☐x **V621 EDWORD v2.2** is a fully featured & operational Word processor which offers all standard features & More like Powerful ones.
☐ **V624 NIB COPIER v2.0** Will copy in AmigaDos, Index Nibble modes, search mode & special parameter copy.
☐x **V625 NCOMM v2.0** Contains, LHArc v2.0, LHArca v1.02, Zoom v5.40, DMS v1.03, LHA v1.11, LHASFX v1.11.
☐x **V627 DPAINT FONTS No's 1-3 (3)** The latest selection Fonts for use with any IFF DTP Program.
☐x **V630 AMICASH** Basically Amicash just keeps track of your transcations with your account/Bank, such as Direct debits, Cheques, Withdrawls.
☐ **V635 IBeM EMULATOR PACKAGE v1.05** IBeM is a CGA Colour IBM-PC emulator written to run on any Amiga This is a demostration version with a time limit of 15 minute. The shareware cost is US$30.
☐x **V636 SHADES & FADES: ANIMFADER,** A utility to fade screens in & out. **SUPERVIEW,** Will display IFF pictures. **TURBOTITLE,** Will create subtitles.
☐x **V637 TWIN EXPRESS v1.1a (2)** Trans any file direct from an Amiga or IBM Pc, By connecting the 2 machines together with a null modem cable. Board rate 115200.
☐x **V639 RADBENCH PLUS v2.0** This is not an update but a completly new set of utilities & WB replacement.
☐x **V640 PAGESTREAM FONT PACK 1** A selection of fonts for use with Pagestream or other DTP Packages **(5)**
☐x **V645 UEDIT v3.0a** Word Processor with learn modes, Online Help, A teach Mode, Split windows, copy & paste, undo & other more standard features.
☐x **V646 SID v2.0 FILE MANAGER** Sid can be used for various operations. The best is proberly the file copier.
☐x **V647 WORKBENCH HACKS** A selection of Hacks that have been reviewed in CU Amiga.
☐ **V648 TITANICS CRUNCHER v1.0** Cruncher with help & various protect modes encludes speed changes.
☐x **V649 WP & SPELL CHECKING** A Collection of utilities. **PP v1.4,** Decrunches Power packer files as they arre loaded. **SUPERSPELL v1.1, SPELLCHECKER v1.2, TEXTRA v1.11,** Word processor. **SCRAMBLER v0.1.**
☐x **V650 CHECKBOOK ACCOUNTANT** Will manage your bank account with easy. Very good indeed.
☐x **V651 THE SUPER KILLERS V2.4: BOOT X v4.45,** This is the best virus killer disk to date kills over 240 virus & may be more. Includes excellent killers. Including **VC v6.3, Zero virus III v1.20 & VT v2.39.**
☐x **V652 PAGESTREAM FONT PACK 2** A selection of fonts for use with Pagestream or other DTP Packages **(5)**
☐ **V657 PC TASK** is a software IBM-PC Emulator. It allows you to run the majorit of IBM software with no additional hardware. CGA Colour. **FULL VERSION.**
☐x **V659 COMPUTER DIAGNOSTICS v9.1** Is theres a problem with your computer them what is it.
☐x **V660 HOME MANAGER** This is a great all in one address book with an inventory database & To-do list
☐x **V661 MODELLING :VERTEX** Allows you to create 3d objects without using the X, Y & Z views. Loads Sculpt 3d/4d, Turbo Silver & more Formats. **MAGIC TWEEN** Will metamorphasize any two pictures.
☐ **V662 DCOPY v3.0 PROFFESSIONAL** You can select the speed of the disk drive, Copy modes, Dos, Nibcopy, Ver & safecopy. Loads of other features.
☐x **V666 MODELLING OBJECTS** Contains over 20 vector objects in Image format. Perfect for use with Disk V662
☐x **V667 STAR TREK OBJECTS** Contains the USS Reliant, NCC1701D & a ferengi plus a Porsche Car.
☐x **V668 PRODUCTIVITY / BUSINESS** Stock Analysis program. **SUBSTORE** Log Magazines with search scans.
☐x **V669 CELLULAR AUTOMA** This electronic model will allow you to simulate cellular circuits.
☐x **V670 ANDROIDS FONTS 1-7** Self installing font disks for use with DPaint programs (2 Drives Rec, **7** Disks)
☐x **V677 ANDROIDS VIDEO BACK GROUNDS** A selection of Background Pictures in IFF Format.
☐x **V678 DRAW MAP v4.0 (2)** Will now generate any 16 colour palette with user control, New features include larger maps with national boundaries, improved help and printing. 2Mb. (1Mb version V263, 1.2Mb version V526 (2))
☐ **V680 OPTIMIZER v1.0** This latest version of the Disk Optimizer. Re-Creates Disks for faster Loading.
☐x **V681 GAME TAMER v2.2** Get a hold of that extra hard game & Cheat with Game Tamer v2.2.
☐x **V682 DEKSID v2.05** Hexa & Ascii Editor for use with your Amiga's Software. Shareware $15
☐ **V683 SUPER LOCK v1.01** Seal your disks / Hard drives for your eye's only. Protects with a Password.
☐x **V684 FONT FARM** A collection of utilities based around the subject fonts. Character Editor v1.0, Font master v1.0, ShowFont v3.3, Set Font v2.5 & more.
☐x **V685 ASTRO PRO ASTROLOGY** The best Astrology program on the Amiga by far.
☐x **V686 MULTIDOS v1.12** This is another must for people with PC disks. After this program has been installed your Amiga drives can read IBM Disks.
☐x **V687 VIDEO WIPES** A collection of IFF Brushs and back ground graphical effects.
☐x **V688 MAGNETIC PAGES v1.30** This Shareware program will create disk based magazines with graphics.
☐x **V689 WALT DISNEY CLIP ART** A Collection of pictures from various Disney Films.

THE STAR TREK SELECTION

☐x **AT05 KLINGON D7 CRUISER,** fires torpedoes while passing by. **NCC-1864 RELIANT,** Very good anim indeed.
☐x **AT10 ENTERPRICES,** Leaves the Star station dock. **NCC 1701-A,** The classic original Animation.
☐x **AT17 THE TWOK NCC-1860,** Reliant & the NCC 1701-A-Enterprise. **MENSCH ROBOTER.**
☐x **AT18 TWOK-0,** Anim **NCC 1860 Avenger** & **NCC 1701-A-Enterprise.** NCC 1089 Grissom.
☐x **AT22 APPROACHING VESSELS,** Animation, Binary Flight Wireframe landscape by T.Richter
☐x **AT23 STAR TREK FLEET MANEUVER,** NCC-1940 Fly over & by animation. excellent classic
☐x **AT33 THE PROBE II,** Animation. **BRID OF PREY,** Animation from Star Trek. **KLINGONHIT.**
☐x **AT34 LEAVING SPACE OFFICE,** Animation. **DOCKING,** Animation from star trek. **ATTACK MODE,** Bird of Prey Scout hip in attack mode.
☐x **1060 STAR TREK THE NEXT GENERATION,** This game is by Terry A. Mc Intosh. v1.47 *
☐x **1081 THE UTLTIMATE STAR TREK (2)** Game by Tobias Richter. Now with English instructions.
☐x **2222 STAR TREK THE NEXT GENERATION** This is the latest quiz game based on the Next generation **(2)**
☐x **SMAUG120** The **STAR TREK** Game by Eric Gustafson US Inport requires **1Mb** & **(3)** disks.
☐ **SMAUG156** The **STAR TREK** Game by Jimbo Barber The American version **1Mb** & **(2)** disks.
☐x **V367 STAR TREK INFORMATION** A Database of all the original series. Very Detailed.

ERIC SCHWARTZ SELECTION

☐x **1700 ANTI LEMMINS** Anim Requires **(2) 2Mb**
☐x **1703 THE DATING GAME** Anim **(2) 3Mb**
☐x **1842 SHUTTLE COCK** Animation **(1Mb)**
☐x **1850 LATE NIGHT** & **TERMINAL** Anim **(1Mb)**
☐x **2013 AGILLITY** Animation disk **(1Mb)**
☐x **2021 VIETNAM CONFLICT** Animation **(1Mb)**
☐x **2133 GULF WAR CONFLICT (2Mb)**
☐x **2307 AMY AT THE MOVIES II (4) 1Mb** Only.
☐x **2311 AMY vs THE WALKER II (2) 3Mb**
☐x **2384 AMY AT THE BEACH (2)** Probley the best animation by ES to date, Excellent **3Mb**
☐x **2427 CAMOURFLAGE ANIM 1Mb**
☐x **2428 MR POTATO HEAD CIRCUS ACT (2)** By Chris Hill. Know this is not an ES Anim but it upto his standard & features one of his characters The Harrier. Excellent story.
☐x **2430 SKUNKS & HUNKS:POGO II ANIM 2Mb**
☐x **2474 AMYHIST** Introduces Amy the squirrel
☐x **2475 BATMAN,** Another Animation.**VTOL,** about a Harrier vs Propeller plane contest.
☐x **2476 HOW TO RUN,** How to run into a wall. Very funny Animation by Eric Schwartz.
☐x **2477 AMYWALKS** Anim of Amy the squirrel Walking. **AMYJOGS** Of Amy the Squirrel Walking
☐x **2478 UNSPORTING 2Mb** Starring the A10 Thunder bolt aircraft better known as the WarHog. Hunt & Destroy tanks.

C.L.R LICENCEWARE £3.50 Per Disk

Central licenceware Register a New collection from the Amiga PD Librarys. £1.00 to the programmer.

☐x **CLE1** TOTAL CONCEPTS: DINOSAURS **(2)**
☐x **CLE2** TOTAL CONCEPTS: GEOLOGY **(2)**
☐x **CLU1** VIDEO TITLES
☐x **CLU3** TYPING TUTOR
☐x **CLG2** DARK THINGS
☐x **CLG4** X-SYSTEM
☐x **CLG6** OBLITERATION
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DECAY

demo

Decay revive old memories of the all-girl dancing group, Pan's People (ask your Dad!), with their latest musical demo. The 70's dancing group wowed males and females alike with their risky dance routines and pelvic action on Top Of The Pops. The intro in question here features two digitised girls performing a dance not unlike the beginning sequence for Tales Of The Unexpected. Mountains of text scroll over the top of the two as they wiggle their boots off in accompaniment to a cartoon worm that crawls across the top of the screen. The digitisation is incredibly smooth and although the girls are very pixillated and bleach white, it is extremely effective. It's a shame the unnecessary text is so boring.

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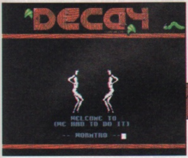

SWEET REVENGE

animation

There's a new animation crew on the scene and they could be all set to steal the crown from its long-time holder Eric Schwartz. Decay, under the leadership of graphics master Game Over, have turned their hand towards producing some full motion animations of cartoon standards. The mini epic features those two arch enemies of the desert Road Runner and Wile E, Coyote. The plot purposely features a storyline that we're never likely to see, but one that every Runner fan secretly longs for – Wile. E actually catching the Road Runner. After spotting the Road Runner's trail of dust in the distance, Wile. E climbs down from his perch and blasts the bird to bits and drops him off a cliff. The graphics are nothing short of incredible. They are complete in every detail right down to the Loonie Tunes camera angles used in the cartoons and the plain, washed out, minimalistic detail of their environment. They have even recreated the Merry Melodies theme tune to put the icing on the cake! Much, much more please!

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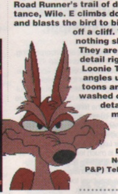
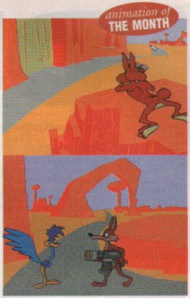




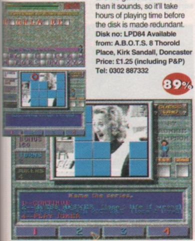
GUESS WHO?

game

You'll have more fun with this game than just about anything else you'll play this month. If the old grey matter is beginning to get dull, pick up a copy of *Guess Who* and revive it. Written in *AMOS*, the gameplay consists of an amalgamation of hangman and a covered picture board, obscured by a series of squares. The more words you can get right in the hangman game the more squares you can reveal of the picture. When you think you've got the name of the famous personality, you enter their initials and wait for the result. Every time you get it wrong you lose a life. There are lots of famous faces in memory and the game is a lot harder than it sounds, so it'll take hours of playing time before the disk is made redundant.

Disk no: LPD84 Available from: A.B.O.T.S. 8 Thorold Place, Kirk Sandall, Doncaster Price: £1.25 (including P&P) Tel: 0302 887332

89%



STAR TREK: THE BEST OF BOTH WORLDS

sampled slide show

The Best Of Both Worlds is the climactic last episode of The New Generation's third series. The program was a TV special commemorating the end of the series, and resulted in Captain Picard being taken over by an alien life force – the Borg if I remember correctly. Selected voice samples have been lifted from the show to tell the tale of how it all happened, along with lots of black and white pictures and excellent sounds. Just as US fans had to wait months before they discovered the crew's fate, so do we with this demo. The first part culminates with the captain announcing he's become a Borg. If you want to know what happens you'll have to wait for the next disk's release, unless you've seen the program already!

Disk no: S566 & S567 Available from: NBS 132 Gunville Road, Newport, Isle of Wight, PO30 5LH Price : £1.75 per disk (including P&P) Tel: 0983 529594

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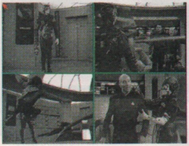
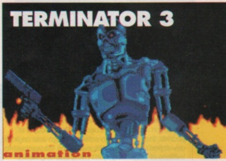
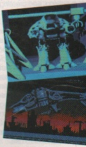


TERMINATOR 3



animation

Terminator demos have been surprisingly thin on the ground. We had the expected Arnie-related disks to be coming into the office by the boxload, but the slide shows, samples and animations have not been as forthcoming. This demo takes the form of an advert for the T800. A mixture of accurate sounds and slightly primitive graphics show the metallic assassins stalking a rebel fighter through a post apocalyptic waste land of the future. The scene then switches to a Hunter Killer depositing Arnie outside a mountain base where he comes face to face with an ED209 (from Robocop!). We don't see what happens next, but you are rewarded for your patience with one of Arnie's now famous one liners.



Disk no: Terminator 3 Available from: STC 20 Holmside, Sunderland, SR1 3JE Tel: 091 565 2506 Price: £1.25 (including £0.50 P&P)

73%

PUBLIC DOMAIN PD UTILITIES

Sheriff Mat Broomfield rides out to the PD coral and rounds up all the latest, plumpest and tastiest utilities this side of the Mississippi.

VIRUS WARNING!!!

Unfortunately I have to start this month's column on a sad note, by warning you about a new, and unpleasant virus which threatens to spoil your day if contracted.

Apparently Fred Fish disk #622 contains a game called *Challenger*, which was written in Germany, and has since appeared on numerous other PD disks. Its author has reputedly seen fit to embed a Trojan time bomb virus in the midst of the game code, and it will transfer itself to any unprotected disks at every opportunity. This virus will become active on July 24th each year, and it's said to lock up the machine, preventing all input for 24 hours. Although the virus is not too bad for floppy disk users as they can easily avoid booting any infected disks on that day, it's potentially lethal to hard drive owners, whose computers will become inaccessible for that period of time.

The British Virus Research Group tell me that you can obtain hunter/killer programs, or further information, from them if you suspect that your computer may have become infected. Call them on 0942 895320.

POWER LOGO

Language

Amidst the fervour of the 1980s home and school computer revolution, one program repeatedly cropped up as being among the best teaching aids for children. The program was Logo, and it let kids practice simple programming techniques by directing the movements of a remote-controlled turtle which drew pictures as it scuttled around on the floor. Since then, the program has evolved to show the turtle's movements on-screen, and it's appeared in numerous formats, including a commercial Amiga release called *AmigaLogo*.

Astute PD users can now buy an advanced implementation called *Power Logo*, for only a couple of pounds, thanks to Ed Lib software. Logo was originally developed by Seymour Pappatt at the Massachusetts Institute of Technology (MIT) as a teaching aid for Lisp, a powerful language used for problem solving, and creating artificial intelligence.

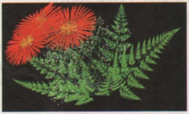
The end result was a fully fledged list-oriented language that could be used for purposes as diverse as applications and games programming and the generation of complex graphics. *Power Logo* feels quite similar to Basic, but is free of many of its constraints. For example, before you start writing the main body of a program in Basic, a whole set of variables must be defined, ranging from the size of arrays, to the numeric protocols to be used. Logo doesn't require any such lengthy start up procedures, and thus it's much friendlier to use.

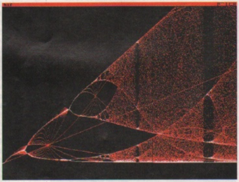
Power Logo is essentially a processing engine; feed it a text file containing your program, and it will interpret and act upon the instructions therein. Text files can be created on any text editor. Unlike ordinary versions of Logo, *Power Logo* is actually a hybrid between Lisp and Logo, offering all of the commands associated with the latter language, and incorporating some of the more powerful functions of Lisp. For example, it can handle nested procedures, and these procedures can even call and refer to themselves. In graphics mode, *Power Logo* can also manipulate multiple cursors (turtles), and these can be used to create recursive images which are the forerunners to fractals.

The program also has commands that let you set up an intuition environment to create menu operated programs that take full advantage of the Amiga's complex architecture. *Power Logo* is a fascinating alternative to Basic, and is much less idiosyncratic to use. It operates on two levels: as a stand alone programming language that bridges the gap between Lisp and Basic, and as a graphical tool akin to some fractal generators. Well worth a look.

DISK ID: Power Logo 3.
PRICE: £2.10 including P&P.
AVAILABLE FROM: Ed Lib, 7 Sampford Brett Lane, Williton, Somerset, TA4 4JT.
TELEPHONE : 0984 32320

76%





Although Power Logo is a flexible Lisp-based language, it is famed for its drawing capabilities. The examples above were drawn using a recursive formula similar to fractal geometry.

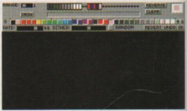
PAGESTREAM FONTS

Fonts

If there's one thing that's guaranteed to interest an Amiga desktop publisher, it's the prospect of acquiring additional fonts for his or her system. In this area, *Pagestream* users are particularly fortunate as it supports standard Adobe type 1 outline/scalable fonts, of which there are plenty available via the Public Domain.

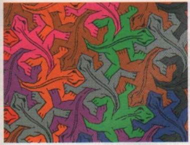
The most impressive selection to date has just been released by Goldstar Computers, and comprises ten disks of new *Pagestream*-type fonts. Each is supplied with an outline description, metric spacing/kerning file and a postscript printer file for output to laser printers. The fonts can be incorporated in your resident font list via the *Pagestream Font Manager*, which will perform all the necessary conversions, and add them to your existing fonts directory.

***Professional Page* users will also be pleased to learn that version *3.0* also supports Adobe fonts, which can be imported via Gold Disk's own font manager. Better still, once converted, the fonts can also be used with any Workbench 2 application which supports scalable fonts via the fountain program. These include *Deluxe Paint 4.1* and a soon-to-be-released word processor, *Final Copy*. The Goldstar fonts come in a mixed batch ranging from average to excellent. The number of fonts on each disk varies, but they average about ten different types each. There are ten disks in the set, but they can be ordered individually. A great selection of fonts for the serious DTP enthusiast.**



DISK ID: U245-U255
PRICE: £1.20 per disk plus 50p postage per package.
AVAILABLE FROM: Goldstar Computers, PO Box 2, Tyldesley, Manchester, M29 7BN
TELEPHONE : 0942 895320

87%



TESSELATOR

Graphics Tool

As MC Escher demonstrated so well, tesselations can be fun – they're also part of the national curriculum. What is a tesselation? Well, it's basically any two-dimensional shape that can be interlocked with duplicates of itself so that there are no spaces between them. The simplest example is a square: lay lots of them side by side and on top of each other, and they will completely cover any flat surface.

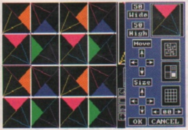
The study and creation of tesselations can teach you a lot about the properties of surfaces and polygons, as well as a number of more abstract scientific principles. Before you can start using the program, you're asked to specify the size and number of tiles to be used in your picture, as well as their orientation. The tiles will contain the image to be tesselated, and they can be positioned in every conceivable way, ranging from horizontal and vertical rows, to diagonal patterns.

Having selected the orientation of the tiles, you can begin creating your piece de resistance. A small selection of *DPaint*-style drawing tools are provided, including freehand, line, circle and what is undoubtedly the strangest fill mode I've ever seen. It achieves the same end results as any standard fill mode, but the way it goes about actually filling an area is unorthodox to say the least! It seems to consists of drawing a series of interlinked rectangular spirals, which are repeated at different positions until the entire area is filled.

Although you're provided with a palette of 32 colours, these can be changed according to your preference. In normal drawing mode, only half of these colours are accessible, but there is a mode whereby you can fill alternating tiles with primary and secondary colours simultaneously. An additional reference palette is provided so that you can see which secondary colours are used with which primaries.

DISK ID: BC136
PRICE: £2.10 including P&P
AVAILABLE FROM: Ed Lib, 7 Sampford Brett Lane, Williton, Somerset, TA4 4JT
TELEPHONE : 0984 3 2320

75%



LAST WILL AND TESTAMENT

Will Maker

It's a sombre thought, but eventually we all die – almost certainly leaving loved ones behind. Although you may not be able to ease their grief, you can at least reduce the amount of work that they must do to put your affairs and estate in order. Probably the most effective way of doing this is to leave a will, but hiring a professional can be an expensive business.

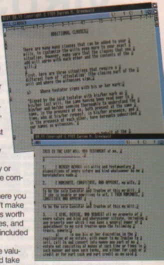
This gloomy, but invaluable program enables you to create your own, regardless of your personal circumstances. It's been ported over to the Amiga from the PC, and includes eighteen different wills to cater for most requirements. It's been written by an American lawyer who has dealt in this area for many years, so you can be quite confident about the validity of the documents. To ensure your peace of mind, the program also includes information on how to tailor each document to your own country or state. There's also comprehensive instructions on how to make each one completely legal and binding.

The wills are all stored as text files with labelled blanks to indicate where you should add personal details, etc. Inevitably, some of the documents don't make for light reading, but considering the potential saving in solicitor's fees, it's worth the effort. The disk also includes details about how to add specific clauses, and warns you about potential areas of legal contention. A text editor is also included so that you can start work immediately.

A thoroughly depressing program, which will become more and more valuable the older you get. Not one for the kids, but parents especially should take note: do you want to take the chance that your kids will be able to guess your last wishes?

DISK ID: Last Will
PRICE: £1.75 including P&P.
AVAILABLE FROM: Start Computer Systems, 20 Holmside, Sunderland, SR1 3JE
TELEPHONE : 091 565 2506

74%



* * *

STRUCTURED CLIP ART

ProDraw Clips

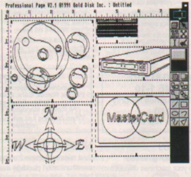
If you've ever tried to buy structured clip art for your desktop publishing package, you'll doubtless be aware of how expensive it can be. That's why its nice to find some on offer in the Public Domain.

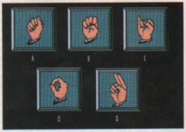
The disk contains four files each stored in the *Professional Draw* clip format. There are a total of fourteen clips, covering a variety of subjects ranging from mountain bikes to bubbles, with the majority based around computing ideas – Commodore, Apple and IBM logos, modems, etc.

There's little else to say about this one. The images are fine, the quality's fine, but it's a shame there aren't more clips.

DISK ID: SC 184
PRICE: £1.25 including P&P
AVAILABLE FROM: Valley PD, PO Box 15, Peterlee, Co Durham, SR8 1NZ
TELEPHONE : 091 5871195

66%





DEAF LAB 1.7

Sign Program

The ability to communicate with each other is one of the most fundamental requirements for building personal relationships. For deaf people, this basic requirement is hampered by the hearing community's ignorance, and sometimes by their own hard-to-understand speech.

Sign language is one way of lowering the communication barriers to integrate deaf people. In its simplest form, it consists of a number of hand shapes and movements representing different letters of the alphabet. If you have deaf acquaintances or relatives who can read sign language, this will aid communication. *Deaf Lab* is easy to use, and is mastered in a matter of minutes. Type a letter, and the appropriate hand sign appears on the screen – simple! The program can be used to communicate with a deaf person who can't read words or lip-read. It can also be used as a teaching aid, either for deaf people who've never learnt to sign, or for those who wish to communicate with deaf people. The hand signs are very clear, and have been designed by a professional artist. I would just offer one word of caution: you should check that foreign signs mean the same thing, as there are sometimes dialectic differences from one place to another. A thoroughly worthwhile program.

DISK ID: FF494
PRICE: £1.75p including P&P.
AVAILABLE FROM: Seasoft Computing, The Business Centre, 80 woodlands Avenue, Rustlington, West Sussex, BN16 3EY
TELEPHONE : 0903 850378

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0670. MONOPOLY. A Classic
1421. BIONIX II. Good shoot'em up
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2113. CRAZY PIPES 2
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-1993. QUICK & SILVA. Amazing quality platform game
+1994. SEA-LANCE. Excellant Submarine sim
+1997. MISSION X (RAID 2). Brilliant Shoot'em up
+1998. ARCADE CLASSICS. Inc Space Invaders
+2002. LLAMATRON. Weird Jeff Minter game
+2005. GAME CHEATS & POKES. Lots of em
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+2074. IMPERIUM. Role play game
-2080. SUPER SKODA CHALLENGE
+2081. F14-TOMCAT. Greta shoot'em up fun
+2083. BATTLE CARS. Neat Battle game
+2089. X.F.I. Excellant Tron clone
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-2290-1. HARDWIRE. Brilliant M Demo
-2295-0. ALCATRAZ "ODDYSEY"5 Disks
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-2364. MAGIC 12 MAD DESISION
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+2382. HIP HOP HATER/DISASTER
+2383. DIGITAL DISCO 2 DISK A
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-1473. TECHNO TUNES
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+1961. TECHNO MANIA 91. Unreal

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+2587. IFF SAMPLES 7
+2588. IFF SAMPLES 8
+2589. IFF SAMPLES 9
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+2597. VIRUS CHECKER V6.03. The greatest
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+2601. BLANK FORMATTED DISK

Professional PD

+PRO001. TEXT ENGINE V3.0. Amazing WP
+PRO002. ZX-SPECTRUM EMULATOR V1.2
+PRO003. AMIGA FOX DTP V1.10. Great DTP
+PRO004. MED V3.2. Latest Version
+PRO005. LABEL BASE V3.0. Excellant DBASE
+PRO006. LAND BUILDER V3.2. Good Vista clone
+PRO007. FREE COPY V1.4. Removes Protection
+PRO008. DATA EASY V1.3. Easy to use
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-PRO010. PROFESSIONAL D-COPY V3.0. Amazing
+PRO011. COMPUTER DIAGNOSTICS V9.1 Usefull
+PRO012. DIRECTORY WORK V1.31. Usefull util
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+PRO017. STARTREKKER V1.3. Works on the Plus
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+1078. ESSENTIAL UTILITIES 2
+1991.. ESSENTIAL UTILITIES 3
+2320. VIDEO DAT V1.2. Catalogues Videos
+2329. FONT FARM. Large collection of fonts
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1151. C-LIGHT. Great raytrace utility, Easy to use
-1202. RED SECTOR DEMO MAKER 1MEG. Brill
+1208. DATABASE WIZARD. Good easy to use Database
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+1368. SPECCY EMULATOR ETC. Runs speccy stuff
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1208. DATABASE WIZARD. Great easy to use Data base
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-1956. PERSONAL ADDRESS BOOK. Store friends information
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-2001. PC EM. Great PC emulator software
-2012. VECTOR BALLS EDITOR FOR RSI. Create your own objects
-2014. RSI DEMO MAKER DELUXE.New data included
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+2157. FREE COPY V1.4. Removes the protection from games
-2158. PROFESSIONAL D-COPY 3. Mega Powerfull Disk copier
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+2175. UNI COPY. Great disk backup util
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—2305. RADBENCH 1.4. Superb Recoverable RAM Disk
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MED V3.2

Terrific new version of one of the most powerful sequencers available

STARTREKKER V1.2

Just released a version of Soundtracker that works on the Amiga Plus

SYS INFO V2.69

Very handy utility which gives you information on your machines chipset etc.

VIRUS CHECKERV6.03

One of the most powerful Virus Killers available, it can detect over 150 Nasty Viruses.

POWER PLAYER V2.1

Can play ANY Tracker module

NCOMM V2.0

Just release Version 2 of the best communication package available.

DCOPY 2

Very powerful disk copier, features numerous copy modes including Deep Scan Nibble.

BOOT X V4.45

Latest version of the best virus killer available, can detect and kill hundred.

TEXT ENGINE V3.0

Very easy to use Wordprocessor, includes spell checker etc

PROTRACKER V2.0

This is the very latest version of Proffesional Tracker. Very Slick!

FREE COPY V1.4

With this great disk copier you can remove password protection from loads of games

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6-10 PD Disks.	£1.75	11-20 PD Disks.	£1.50
21-99 PD Disks.	£1.25	100+ PD Disks.	£1.00

Deja Vu Software	£3.50
BAD BOYZ Licenceware	£3.00
FISH Disks	£1.00
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+ = A500+Compatible
A note to all A500+ owners, some disks contain more than one program, and on a large compilation not all programmes are guaranteed to be compatible.

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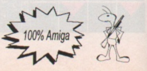
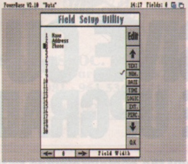


POWERBASE 2.10

Database



Deja Vu software have acted as a magnet for *AMOS* programmers, and have steadily accumulated a variety of the very best programs the language can produce. *PowerBase* is no exception, and is probably the finest example of business software to date, and out-performs many full-priced database systems.

The program is a fully featured database which supports all the usual data formats – text, numeric, IFF, etc – and allows the user to access them via video-style controls. These controls have become almost a standard feature of such programs since its introduction in *Superbase*, the leading Amiga database. However, few programs have managed to implement the system quite as well as *PowerBase*, as it allows a great deal of control without the user ever touching the keyboard.

The program is designed to run on a 1Mb Amiga, and its author claims that this will permit you to store up to 10,000 records, each of which may contain as many as twenty fields. Unfortunately, the field lengths are not dynamic, so you'll need to work out the maximum entry size for each one before you start. You can set up unlimited forms so that information is presented according to your exact requirements in any given circumstance. These forms will affect both the page layout and the printed results.

You can also add three different types of password protection, setting variable levels access for different users. As the program uses all available memory, all files are stored in RAM while you're working. This is a bit of a double-edged sword as although it makes things much faster, it also means that your database could exceed the amount of available memory, especially if you only have 1Mb.

PowerBase is incredibly easy to use, and there are tons of additional options to make things even simpler. It's not the ultimate database, but it's one of the best to appear on the PD circuits.

Disk No:LPD 77. Available from 17 Bit Software, 1st Floor Offices, 2/8 Market Street, Wakefield, West Yorkshire, WF1 1DH. Price: £4 .00 inc P&P.

83%

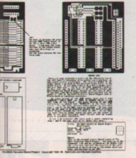
• • • • • • • • • • • • • • • • • • • •

ROM SWITCHERS

DIY hardware project

If you're feeling exceptionally adventurous, and have a degree of soldering competence, you may be tempted to try the DIY project contained on this disk.

As the title suggests, it gives you complete instructions on how to construct your own Kickstart switching board, allowing you to enjoy the advantages of a 2.0 operating system, whilst retaining 1.3 compatibility.



Complex schematics are provided in the form of IFF screens, but unless you have access to a printer, forget it. I'm reliably informed that the project does work, although its authors go to great pains to disclaim any responsibility if you accidentally blow your computer up.

Instructions are given in clear language, but when it gets down to the technical nitty gritty, the language used ceases to be English and becomes some very technical variation that's littered with phrases like 'logical norgates' and 'variable capacity quad-gates'.

If you understand what either of those phrases mean, why not give it a look. If, like me, you're still scratching your head, best stick to the Meccano!

Disk No: F587. Available from: PD City, 119 Ballards Walk, Basildon, Essex. Price: £1.50 Inc P&P. Tel: 0268 412645

56%

THE NEW SUPERKILLERS

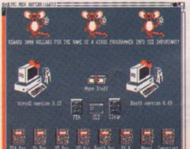
Update

The Amiga world is awash with viruses, all of which are only to happy to sink the unsuspecting user. Fortunately, there's a network of public-spirited souls throughout the world who are only too happy to help you rise above the danger. They're called Safe Hex International, and they comprise 250 members, all of whom are ever vigilant for the threat posed by viruses. Many of them are programmer s, and as a result they are able to release effect new virus killers on a regular basis.

This disk contains eight killers, which between them can track and kill 232 different viruses. Perhaps the best of the killers is called *Boot-X V4.49*. It recognises viruses by way of a brain file which is automatically loaded with the main program, or can be loaded individually. This means that as new viruses are discovered, you only need to update the brain file to remain right up to date. *Boot-X* is capable of finding all of the main types, ranging from boot-block, file and disk validator viruses to worms and other hard drive killers. Everything is controlled via five comprehensive menus, and there are even options to try and repair damaged disks. An essential purchase.

Disk ID: New Superkillers. Available from: Goldstar Computers Ltd, PO Box 2, Tyldesley, Manchester, M29 7BN. Price: #_1.70 Inc P&P. Tel: 0942 895320

88%



REWARD 3000 DOLLARS FOR THE NAME OF A VIRUS PROGRAMMER INFO SEE IMPORTANT!

PICTURESQUE

Screen & sprite design

It's rare to encounter a decent art package via the Public Domain, and rarer still to find one which boasts features which even *DPaint* doesn't have. That's exactly what *Picturesque* can claim! This is ironic, as the program's self-effacing author clearly states that he's not trying to compete with EA's long established package.

The program has been written using *AMOS*, and is a fine example of what can be created if enough effort is invested into a project. It has most of the usual tools – freehand draw, fill, rectangle, cut and paste, air brush, circle, etc – but it's in the area of unusual tools that the program picks up a few bonus points. In the first place, the user may specify whether the image being worked up on is to be treated as a screen or a sprite, and if it's to be a sprite, how large it should be.

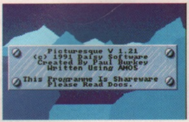
There's also an interesting draw mode called Shade, which is ideal for creating half-tones when working with a limited palette, and is something that one always had to do manually before. This option is so useful that I can't believe it was never included in *DPaint*.

The palette editor features some rather strange options, including a sort mode which arranges the colours according to luminance, and reverse which simply inverts the entire palette. Both options alter the onscreen colours, but with a bit of thought they could be used to create some interesting (and unexpected!) results. The author's sense of humour reveals itself in the palette configuration menu which includes the options, Default, Random and Slightly Random. I've yet to figure out what Slightly Random does, but it does seem to do something! Additional nice, but not specifically arty, options can be found in the Disk menu, where one has the option to create additional drawers (directories) on the current disk, or find out how much space is available for saves.

***Picturesque* operates in high or low resolution, and supports up to 64 colours. Although a number of *DPaint* options are absent (a text mode for example), the program does have a number of features to commend it, the most notable of which, is its ability to save sprites for later use. It works at a decent speed, although there were two minor bugs, one of which the author points out himself. It's not going to replace *DPaint*, but it's an excellent alternative.**

Disk No: U206. Available from: Roberta Smith DTP, 190 Fallodean Way, London, NW11 6JE. Price: £1.30 inc P&P. Tel: 081 455 1626.

87%



Picturesque V 1.21
(c) 1991 Daisy Software
Created By Paul Burkey
Written Using AMOS

This Programme Is Shareware
Please Read Docs.

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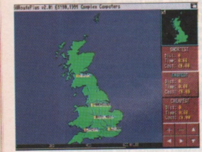

Thanks to CU AMIGA, you can now upgrade your *GBRoute* disk, as featured on our June issue cover disk, to the full blown *GBRoutePlus for only £49.95 fully inclusive. The normal cost of *GBRoutePlus* is £79.95 which means a full £30 saving for CU AMIGA readers.**

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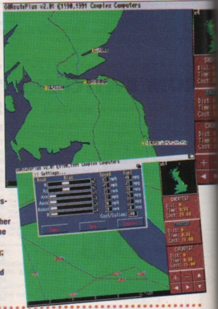

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U3	Graphics Utility 2
U4	Jazzbench
U5	Loadsaicons (P)
U6	Brian Postman's Sound Monitor
U7	Diskmaster v 3.0
U8	Midi Utilities
U9	Sound Workshop
U10	Icon Maker
U11	Iconmania (P)
U12	A-Render
U13	Mandelbrot 1 & 2 (2)
U14	Clerk
U15	C-Light Ray Tracer
U16	Deluxe Draw
U17	Star Charts, Biorythms (P)
U18	Demos Creators Disk
U19	Space Writer Demo Creator
U22	Relational Data Base
U23	Clip Art Disk 1 (P)
U24	Clip Art Disk 2 (P)
U25	Commsoft
U26	Commspanion
U27	Demolisher Utilities
U32	Opti Utilities
U34	Megados
U35	Amiga Computings Work Station
U36	Utilities 1 & 2 (2)
U37	Quantum and Tempest Utilities
U38	Digitech Utility Disk 1.1
U39	Various Utilities
U40	Zodiac Compackter v 2.0
U42	Disk Salvage
U43	Various Utilities
U44	Master Virus Killer 2.0 (NP)
U45	Fullforce Utilities (lots)
U46	Davy Jones Fonts 1
U47	'C' Language Manual - (3)
U48	Paul's Freeware Collection
U49	'C' Language Compiler
U50	Intro Pics
U51	Art Parts 2
U52	Deskbench Icons
U53	Fullforce Mega Utilities 2
U54	Quickbench Plus (P)
U55	Programming Disk 1
U56	Games Music Creator
U57	Geneaology * (P)
U58	Anti Flicka
U59	Windows Bench - (2) (P)
U60	Messy Sid II
U62	AZ-Comm
U63	DBW Ray Trace Package
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U65	Graphics Disk 5
U66	Direct Action Animation Creator
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U70	The Comms Disk
U71	Supertex Modem Utilities
U76	Modem Utilities
U77	Red Devil Utilities 6
U79	Red Devils Utility 4
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U97	System Excerciser
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U100	Catalogue Workshop Two (P)
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U102	Hard Disk Utilities
U103	Amateur Radio (6) (P)
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U105	Amicash Bankin Accounts (P)
U106	Q Base & Spreadsheet (P)
U108	Visicalc Spreadsheet (P)
U109	GFX Utils 1 (P)
U110	P.D.C. Disk A B & C (3)
U111	Analyticalc * (2) (P)
U112	Flexibase XXXX (P)
U113	Ham Lab
U117	Special Brothers Vector Editor
U118	Bc-Fortran 77
U119	Clip It Art 3) (P)
U120	Clip It Art 4) (P)
U121	Clip It Art 5) (P)
U122	NComm 1.92 (P)
U123	North C Disk A & B (2) (P)
U124	Business Card Maker (P)
U125	Crossdos
U126	Squash I (A500+ only)
U128	Scalc & Wordwright
U129	Wordwright & Amigaspell (NP)
U130	Textplus Wordprocessor v 2.0 (P)
U131	U-Edit Wordprocessor (NP)
U132	Textplus Wordprocessor v 3.0 (P)
U133	600 Business Letters (P)
U134	QED Text Editor (P)
U135	Amigafox DTP v1.1 (P)
U136	Amigaspell (NP)
U138	Amigafox v 1.0
U139	A64 Emulator (NP)
U141	IBeM
U143	St Emulator (NP)
U144	Spectrum Emulator (NP)
U145	Text Engine v 3.1. (P)
U147	P D Copy v 3.0
U148	A-Gene (P)
U149	Commodore C64 Games Disk 1 (NP)
U150	Commodore C64 Games Disk 2 (NP)
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U154	Spectra Paint v3.2
U155	Kefrens Metallion Utilities (P)
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U158	Micrognuemacs - Texteditor
U162	AZ Spell (P)
U164	ACU General Utilities 24
U166	Amiga Coders C lub (6)
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U189	D Copy v 2.0 (P)
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U192	Deltrax Utils 2
U193	Octamed v 1.0b * (P)
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- **U33- M-CAD-** Computer Aided Design pac
- **U35/6/7- Darkstar Utils-** Nos 2 to 4
- **U38- Assassins Boot Utilities-** Excellent
- **U42- SID *V2*-** The *Only* directory util ?
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- **U45 - 52- CLIP IT!-** EIGHT disks !!
- **U54- Hard Disk Utils-** wouldn't be without
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- **U58- .BeMulator-** An exceptional tool
- **U61- Intercostal Utils-** Brilliant disk
- **U70- Darkstar Utils 5-** Yet another !
- **U83- Sculpt 3D Scenes-** For Sculpt owners
- **U87/8- Graphics Management**
- **U90- Geneology database-** Needs 1 meg
- **U93- Spectrapaint *V3.2*-** Brilliant rival
- **U94- Opti Utils 1-** Excellent quality
- **U98 - 104 High Quality Clip Art 7 disks**
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- **U121- Spectrum Emulator-** Rather good
- **U129- Pascal Compiler-** Very popular
- **U131- Assassins Multivision-** GFX tools
- **U136- Electrocad *V1.4*-** Latest version!
- **U143- SuperKillers- BOOTX *V4.49***
- **U145- Total Utils 1- 20** utilities
- **U152- Xenon Utils-** Seventy five utilities
- **U156- Garfield Clipart-** Usefull stuff ?
- **U161- Anthrox Utils V5-** Recommended !
- **U162- Deflex Utils 1-** Unusual collection
- **U170- Icon Magic-** Excellent programme
- **U172- DTP-** Based on the amigafox W/P
- **U188- Programming 1-** Lots of info
- **U192- Night Flyers 4-** Excellent disk
- **U195- Opti Utils 2-** Latest version utilities
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- **U226- Gelignite Fonts- Brilliant**(ta mark)
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Educational & Games

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- **G50- Shapes-** Absolutely brilliant 4 kids
- **G53- Zeus-** Very addictive tile game
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- **G62- POM POM Gunner-** ***Very Good !***
- **G70- Skier-** Excellent game
- **G72- Snakepit-** Suitable for the kids,good
- **G91- Insiders Club-** Stock Market strategy
- **APD59- Super Quiz-** Excellent quiz game
- **APD62- Arcadia-** Nice breakout clone
- **APD110- Crossfire-** Very nicely done
- **APD115- Baloonacy-** Superb for the kids
- **APD130- Wooden Ball-** Brilliant !!!
- **APD142- Pair Crazy-** Very good
- **APD146- Fruit Machine-** For the addict
- **APD148- Demolition mission-**
- **APD160- Quizmaster-** Excellent
- **APD178- Mastermind / Pairup-** Good
- **APD180/1- Dungeon Delver-** Brilliant
- **APD182/3- Pixie Kingdom-** Very good
- **APD314- Blackjack Trainer-** Superb
- **APD315- Silver Bars & The Enemy**
- **APD326- Hyperball-** ***Best yet, get it***
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- **B14- Visicalc-** Similar to lotus 1-2-3 on PC
- **B17- QED-** Superb texteditor
- **B18- Textplus *V3.0E*-** Edit crunched files !
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- **B21- BBase II-** Easy to use database
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- **B23- TextEngine V3- Superb**
- **B30- Amibase Pro II-** Ex Licenceware
- **B31- AmiCash-** Excellent accounting
- **APD52- Forms Really Unlimited**
- **APD132- Family History Database**
- **APD138- Spanish Tutor-** Pretty good !
- **APD257- Cassette Labeler-** For the inlays

Slideshows & Pics

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- **P25- Roger Dean-** Excellent slideshow
- **P32- Agatron 6-** From Tobias Richter
- **P33- Agatron 8-** More from T Rs stable
- **P40- Max's Art-** Very nicely done.
- **P41- Nemesis Prologue-** From Hanibal
- **P48- Psygnosis slidshow-** Rather brilliant
- **P54- Sunconnection-** More from this group
- **P62/3 Channel 42 & Silents-** Very good
- **P65- Agatron 12-** Fantastic quality
- **P66- Fraxion Future Visions-** Very good
- **P67- Agatron 11-** Incredible standards
- **P76/7- Nemesis Chapt. 1-** The next chapter
- **P78/8- Laurel & Hardy-** Brilliant for fans
- **P83- Invisible world-** Bugs n things
- **P85- Robocop-** By Hanibal,*Unbelievable !!*
- **P89- Art for Arts Sake-** By Hanibal- Brill

Animations (most 1mb)

- **A06- More Aerotoons-** By Eric Schwartz
- **A10- Batman-** This is brilliant (by E S)
- **A11- Puggs in Space-** Brilliant
- **A12- Probe-** The most famous of all anims
- **A17- Stealthy II-** Excellent little animation
- **A19- Star Trek Fleet Manoeuvers-** good
- **A20- Agatron 26-** Dry dock
- **A13- Agatron 2-** Includes F15 fighter
- **A49- Fractal flight-** Small screen anim.
- **A58- Walk-** Brilliant chrome legs walking
- **A61- Agatron 15-** Billiards & Lotus + F15
- **A62- Stamp Collector-** Brilliant sequence
- **A63- Juggler II-** Very, very funny see it !
- **A76- Agatron 30-** Millenium Falcoin
- **A79- Agatron 33-** Probe &bird of prey
- **A83- Discovery Shuttle-** Very good
- **A87- Car-** Lotus & Unicycle, brilliant
- **A89- Agatron 22-** Includes aproach + more
- **A90- Agatron 20-** Belle Huey Helicopter
- **A94/5- X-Wing-** Rather brilliant sequence
- **A96/7- Light Cycle-** From Tron and Brill !
- **A98/9- Anti-Lemmings- 2 MEG**
- **A100/1/2/3/4/5- The Wall-** Exceptional
- **A107/8/9/10- THE LANDING- 4 MEG**
- **A112- Juggette II-** Another hilarious anim
- **A115- Agatron 27-** Book and others
- **A116- Agatron 28-** Disconnect, Beautiful
- **A117- Agatron 29-** Millenium Falcon
- **A124- Shuttlecock-** By Eric Schwartz
- **A126- Real 3D Anim-** "Real Pinball"
- **A127- Real 3D Anim2-** T-Pot and balls (?)
- **A135/6/7/8/9- Odysey** Incredible to see !

Music

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- **M04- Vangelis-** Brilliant music & graphics
- **M10- Jean Michel Jarre-** With good pics
- **M18- Amigadeus-** By Rod Baxter- Brill
- **M19- Classix 1-** Mr Baxter strikes again !
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- **M34- APDC 11-** Sound utilities
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- **M52/3/4/5- Modules-** Need I say more ?
- **M58/9/60- Metal Modules-** Good
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- **M152- Midi Programmes-** More
- **M165- MED V3.2** Fantastic music editor
- **M172- Audiomagic *V1.1*-** Brilliant utilities
- **M196- Powerlords Sound Utilities**
- **M198/9- Vivaldi-** By Rob Baxter
- **M201/2/3- House Samples**
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- **LPD53- Magpies Clipart 3-** **512k**
- **LPD54- Magpies Clipart 4-** **512k**
- **LPD55- SpriteX V1.32-** An update to the earlier version and enhanced. **AMOS**
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contents . . .

New features this month include the first part of a massive mouse round-up, which promises to be the most comprehensive look at our electronic furry friends ever published. There's also the first installment of DIY, a regular do-it-yourself feature which, over the coming months, will show you how to install accelerator cards, internal hard-drives, and other such goodies. The second part of our ARexx three-parter delves further into the Amiga's new programming language, and regulars such as Comms, Education, Q&A, Points of View, Inside Info, and Backchat round off an already full-to-the-brim issue.

148 MOUSE BUYER'S GUIDE

Everything you always wanted to know about the humble mouse is explained by Mat Broomfield, as he takes a look at the finest mice money can buy. If you're thinking of upgrading from your Commodore mouse, this is the place to look.

152 BACKCHAT

A bristling three-page letters page features much fierce debate as egos clash and angry young men let off steam. If you've got a burning question or want to get something off your chest (Steve Keen's chest wig, for instance), now's your chance to tell the world.

156 MUSIC

Tony Horgan returns with another instalment of his mightily popular music column. This month he's turned his attention to sample disks and picks the best from an impressive array of contenders. If you've always wanted to make sweet music with your Amiga, Tony offers you a short cut to fame and fortune.

160 INSIDE INFO

As product placement comes to Amiga games, CU asks where will this new trend end? Rik Haynes takes a look at Microtime Media, the company responsible for placing advertisements in popular computer games and debates the merits of such practices.

163 AREXX

Alex Gian continues his look at the new ARexx language and dares to go where Commodore's technical support fears to tread. If you're a fed up 500Plus owner who wants to get to grips with ARexx, but doesn't know where to begin, here's the place to start.

168 COMMS

Two new boards come under the scrutiny of comms maestro, Dave Burns, as he critically assesses whether they're worth running up a BT bill for. If you want to find out what these boards have to offer, turn to page 168 now!

170 EDUCATION

Mike Gerrard takes a look at Europress's new *ADI* educational software, set to rival the popularity of their *Fun School* series of educational disks. Join us as Mike takes a look behind the scenes at how a piece of software develops and what problems occur when a French program is redesigned for the British market.

172 Q&A

If you're in need of some technical help, Mat Broomfield is here to answer all your Amiga-related problems at the CU Amiga clinic. Read Mat's helpful advice on anything from printers and accelerator cards, to graphic packages and compatibility problems.

176 DO-IT-YOURSELF

This brand new series kicks off with a look at constructing a simple mouse and joystick converter which lets you switch between both devices at the click of a button.

178 POINTS OF VIEW

It's soap box time again and this time it's the turn of CU Amiga's Editor to rant about the excessively high marks awarded to games software by some elements of the computer press. Read his thoughts on the thorny issue of overmarking and what he thinks can be done about the problem.

A mouse is one of the most frequently used objects an Amiga owner will need. Mat Broomfield looks at the variety available to find out which is the big cheese.

PART 1

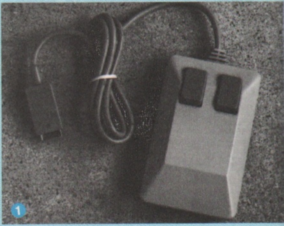
mouse round-up

MOUSE-GIVINGS...

Over the past few years, Commodore have upgraded virtually every part of the Amiga, ranging from its disk drives and circuitry, to the colour and shape of its casing. One exception to this extensive redevelopment, though, is the mouse. As a result the Commodore unit is now starting to resemble a dinosaur in a world of new-age input devices.

Although there is less scope for radical changes in mice than there is in joysticks, manufacturers still have to consider the same basic things: ergonomics, appearance, reliability, functionality and price.

As with joysticks, functionality is probably the most important factor: how well does the device work? Ergonomics comes a very close second, with the feel and shape of a mouse extremely important – especially over long-term use – and this is probably the main cause for dissatisfaction over Commodore's angular mouse. Although reliability is not usually a factor which can be assessed when buying a mouse, nothing is more frustrating than losing your favourite mouse because the cable has snapped, or the optics have shorted. Price and appearance bring up the rear, in terms of the factors to be considered when buying a mouse. After all, what's the point in spending a fiver on something which only lasts a week, or having a fantastic designer appearance, yet is virtually unusable? Let's take a look at some of the available choices...



① THE COMMODORE MOUSE

COMMODORE (0628) 770088
£39.99

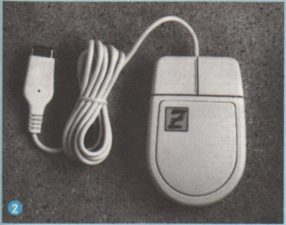
Love it or hate it (the latter is more likely), every Amiga owner has used a Commodore mouse at one point, making it a good benchmark against which to compare the other devices.

There are two versions available, with no apparent logic defining who gets which with their machine. Both have the same shell shape, and are equally responsive. They also have two buttons, each of which activates a bubble-type micro-switch. These lack the positive click of certain types of microswitch, but are reasonably reliable, and respond well, even if they do feel a bit sluggish. Both versions are friction driven, which means that they contain a rolling rubber ball, which seems to attract dirt, causing the mouse to falter and stick every so often.

The first type of mouse features metal rollers, which are likely to last longer than the plastic ones in the second type. They're also considerably easier to clean, although they tend to need it more often.

Because their shells are so angular, the Commodore mice are not particularly comfortable to use. This is made worse by the thick inflexible cable that constantly gets in the way.

RESPONSIVENESS	75%
ERGONOMICS	30%
DURABILITY	90%
PRICE	20%
INNOVATION	50%
OVERALL	**53%**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3
SpeedMouse

2 ZYDEC MOUSE

ZYDEC (0386) 765500
£16.99

The Zydec mouse has been designed to work on both the Amiga and Atari ST, and consequently includes a switch on its underside to toggle between the two modes.

It's very ergonomic,and fits naturally into your hand thanks to its sweeping shape. Both buttons are fitted with fast, sensitive microswitches which give a gratifying little click when pressed. A raised lip between the two buttons prevents your fingers from inadvertantly wandering. Also, like the Commodore mouse, it includes a dirt-attracting rubber ball, and a combination of plastic and metal rollers.

It's quite heavy and feels solid, suggesting that it's designed to last, but it makes an irritating jangling noise when lifted from the mouse mat. On the plus side, though, it features a very soft, flexible cable which is not intrusive at all.

A high resolution of 300 dots per inch (DPI) means that you'll need to adjust the speed setting of your preferences, but you'll get a much smoother, and more responsive ride when using graphics applications, etc. The whole thing is finished off with an excellent split-level casing, making it look like the rodent equivalent of an XR3I

RESPONSIVENESS	85%
ERGONOMICS	90%
DURABILITY	75%
PRICE	80%
INNOVATION	60%
OVERALL	**78%**

3 LOGIC 3 SPEED MOUSE

SPECTRAVIDEO (081) 900 0024
£16.99

At first glance, you could be forgiven for thinking that this mouse was identical to the Zydec mouse in all but name. However, the Logic 3 model doesn't quite achieve the same high standards as its rival. It has been ergonomically designed, but it's not quite as swept back or low sitting as the Zydec. In fact, both mice use identical lower shells, but the Logic 3 uses a different design for the upper casing.

The buttons use clunky style microswitches, which prove quite responsive. However, open it up, and you'll discover that the microswitch mechanisms are a nightmare example of botchery. Because Spectravideo have chosen to use a different casing section and microswitches to Zydec, the stalks of the buttons don't quite reach the microswitches. To compensate for this, several tiny plastic disks have been lightly glued on top of each other and on to the actual switch head. As a result, these wobble about, and I'm certain that they must significantly reduce its effective life.

It also operates at 300 DPI, is dual format and features a soft cable. If it weren't for those micro-switches, I would say that this is definitely your best bet in terms of durability.

RESPONSIVENESS	80%
ERGONOMICS	85%
DURABILITY	40%
PRICE	70%
INNOVATION	55%
OVERALL	**66%**

4 SQUIK

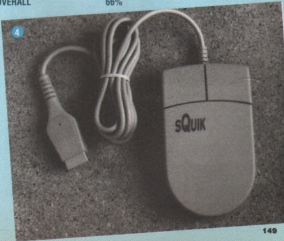
SPECIAL RESERVE (0279) 600204
£15.99

Against all the odds, this mouse is actually very responsive, and gives smooth control which, if anything, was better than that of the Zydec unit, despite the Squik's slightly lower 290 DPI resolution.

Such is the design of the unit, though, that it feels bulky, and not overly comfortable; the buttons have too much vertical travel, and use clunky switches, and the shell feels and looks cheap and nasty. Aside from these niggling faults, though, other features include a dual-format switch, a rubber ball, and metal rollers. The ball compartment is relatively difficult to open, and the whole thing doesn't feel very durable.

The Squik seems to have been designed with functionality and economy of price foremost in its design criteria, and as such it succeeds, though not very elegantly.

RESPONSIVENESS	90%
ERGONOMICS	60%
DURABILITY	50%
PRICE	80%
INNOVATION	50%
OVERALL	**66%**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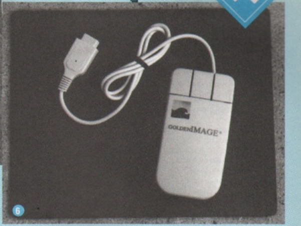
mouse round up

PART 1

5
CONTRIVER



5 THE POWER MOUSE/CONTRIVER 5 IN ONE

POWER COMPUTING
(0234) 843388
£15.00
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£15.00

To all intents and purposes, these are one and the same device, with slightly different packaging. Despite such similarities, though, these two win my vote in every important area.

Both are comfortable in the hand, although perhaps a tad wide, but the low design makes for much more natural movement. The shell is made of shiny plastic, which despite appearances, comfortably withstood being dropped lots of times from a height of four feet!

They're both dual format, and have a switch on the side to toggle between the two computers. They use durable metal rollers that clog quickly, but are very easy to clean. Ironically, the rubber ball stays remarkably clean (this is probably because any dirt transfers itself straight to the rollers!).

The microswitches are very positive, and the wide buttons let you rest all four fingers on the mouse if you want. In addition, both of these rodents are supplied with a mouse-house, which can be stuck to the side of a monitor or desk so that you can stash the mice out of the way when not in use. The 5 In One is also supplied with a small mouse mat, and an installation disk so that it can be used on PCs.

At 290 DPI, they have a moderate resolution, and this translates into smooth and fluid movements on-screen. If you own many different computers, go for the 5 in One, if not, the Power Mouse is my Pick of the Month.

RESPONSIVENESS	85%
RGONOMICS	85%
DURABILITY	85%
PRICE	90%
INNOVATION	55%
OVERALL	**80%**

6 GOLDEN IMAGE OPTICAL MOUSE

DATEL (0782) 744707
£39.99

The ultimate in luxury must surely be an optical mouse. As they have no ball and roller mechanism – or, indeed, any moving parts other than the buttons – there's nothing to clog or otherwise interrupt your movement. Or at least that's the theory...

Golden Image's mouse is extremely narrow and fairly low and, to be honest, I wasn't a fan of its small dimensions. It comes with an optical mouse mat (which is essential), and the mat has been significantly reinforced since the mouse's early days, but the backing still tends to warp. This means that the mouse is constantly moving up and down the bumps and furrows, losing responsiveness as it does so.

The mouse has three buttons, one of which is not used, and they are fairly positive on use. I had thought that, as an optical mouse, it would be far more responsive than the other units tested – not so. The mouse has a low resolution of only 250 DPI which doesn't help, but the worst problem I found was in tracking diagonal movement. Try and draw a freehand diagonal line, and you end up with something that looks decidedly wonky.

Although the unit requires a minimum of maintenance, it is neither comfortable or responsive enough, and appears to be quite fragile, too. Quite a disappointment.

RESPONSIVENESS	40%
ERGONOMICS	60%
DURABILITY	60%
PRICE	50%
INNOVATION	90%
OVERALL	**60%**

A QUICK DISECTION

As an input device, the mouse has irrevocably changed the face of computing; making it easier, and facilitating the development of window and menu-based software. Inside, they're actually quite simple devices, and it makes you wonder why they weren't used on home computers from the outset. Let's have a look at what makes it tick:

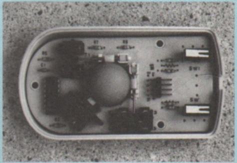
A mouse consists of three main elements: mechanical, electrical and electronic. The mechanical part of the mouse is the ball and the mechanism for keeping it in place and registering its vertical and horizontal movements. Inside the mouse are two narrow rollers set at right angles to each other, and these press against the rubber ball when it's in place. A third spring-loaded roller is juxtaposed at the opposite corner of the ball, and this maintains the ball's pressure against the other two rollers.

The two rollers are attached to spindles, at the ends of which are two tiny wheels with regularly placed slits cut through them. As the rollers rotate, so do the wheels.

Behind the wheel are two tiny infrared transmitters which shoot beams of light at the wheel as it turns. In front of the wheel is a small plastic plate that has a pin-prick hole in it, and this functions like the lens of a camera, focussing any infrared light on a specific point. Where the light focuses, there's an optical receiver that has two states, on and off. When light hits the receiver, it changes its resistance to electricity, and the mouse circuitry interprets this as movement.

If the mouse is moved in any direction other than vertically or horizontally, both rollers will move, although one will usually turn at a slightly different rate to the other. Using this difference, the mouse controller chip can identify exactly which direction you're moving it, and how fast.

Also connected to this chip, are the mouse buttons, and again, these simply send a signal when they're pressed (switched on).



BACKCHAT

HOW LONG IS A PIECE OF STRING?

I read with interest the article concerning the 'Ultimate Amiga'. You listed thirteen items which would make the ideal set up. What I want to know is, with all those bits and bobs, how much would it cost to buy the set up, including the A3000, high-class monitor, graphics tablet, a printer and SCSI drive. I know you covered loads of other stuff, but this is what I think I need to have a really good system.

Sean Gold, Hull

We hope you've got a sturdy bank balance, Sean, as this set up doesn't come cheap. A good package including a monitor, 100Mb hard disk, Fast RAM, etc. is going to cost over £3000. With the addition of a printer and other accessories, the total should come to around £3500 but we'd only recommend a system like this if you were thinking of adapting your computing skills towards something like graphics programming or demo making.

THE PRICE OF PIRACY

I am writing in response to a letter you published in the May edition of your magazine which was titled 'A Pirate Rants'. I have to admit that I have got some pirate copies of games in my collection, but this is not because I enjoy pirating and get a kick out of breaking the law as the writer of the aforementioned letter seemed to imply. It is because I simply can't afford a lot of software at present day prices. The letter in question said that pirates wouldn't buy more software if it were cheaper – all I can say to that is rubbish! I used to have the brilliant *Speedball 2* as a pirate copy, but as soon as I got the chance to get it at a reasonable price I coughed up the required money. I, for one, like all the fancy packaging and manuals. I would also much prefer a proper copy rather than a manky old disk with the game's name scribbled across it. I use pirate games to see if I like them and to see if it's worth shelling out for. I'm only fifteen and have to look after my cash. Doesn't Mr A. Nonymous realise that if people like him, and maybe me, continue in the same way nobody will want to write games. It won't be worth their while.

James E, Out There, Somewhere

Thanks for your letter, James, we couldn't have illustrated the psyche of the addicted pirate any better! The biggest problem with piracy is that pirates do not regard what they do as a crime. Here, James writes a letter to condemn one pirate whilst he himself admits he's guilty of the same act! Trying out games first is no excuse, why do you think companies get together with magazines to produce cover disks, why can't you stick to using those? The only point we at CU have any sympathy for is the extortionate price of games, which seem to be going up all the time. The argument against piracy by companies saying that the reason for high prices is due to money lost through pirates does not wash. Most software companies produce console cartridge versions of their games, which can't be copied, and they retail for nearly twice the price of the Amiga versions, with little separating the two in terms of content. However, the solution is simple: if you don't stop pirating there will be nothing left to pirate. The few pounds you save now will be eaten up when you find yourself having to fork out a couple of hundred quid for a console and its carts at £45 a time.

ACCELERATOR PROBLEMS

I am considering buying a 68020 accelerator for my Amiga 2000. What would be the best coprocessor to go with it: a 68881 or 68882? I'm hoping to use them to speed up 3D renderings. Are there any hardware or software complications that could arise from these acquisitions?

Tim Morris, Poole

There are always some compatibility problems when using accelerators and the like. The biggest problems usually occur with games software as they often incorporate 'illegal' tricks and programming techniques to wring every bit of performance out of the machine. They also frequently have copy protection programs which crash when run on any processors other than the 68000. Commodore has published a series of programming guidelines for coders to follow when creating new software and, if followed during production, programs should work on virtually any system. I wouldn't advise buying a 68020 card as, compared to the 68030 and 68040 cards, it comes in a very poor third. Considering your applications, there are even faster boards available than these and might be worth exploring – price permitting! However, both the ones you have mentioned are fast and functional. As for the co-processor, the 68882 is obviously the upgraded version of the 68881 and therefore the better of the two.

ICON, I CAN'T!

Please help my poor old brain as I'm now getting desperate. Us older computer users just aren't as clever as you 'Tefal-headed' people and I need help drastically. I can not copy individual programs from your coverdisks onto one disk. I can copy them if there is an icon with which I can drag over the other disk symbol, but I just don't know what to do otherwise. Would you tell me in idiot language how to do it? Many thanks

M. Abernethy, Enfield

Of course, it is always easier to move files when they have icons but on the coverdisk these are sometimes left off in the interests of saving space. In this case, there are two ways of copying files. The first is to become an expert on the CLI. From a shell you can then type, for example: *Copy*

THE EARLY BIRD...

Why do you review games so far in advance? After reading a review, I want to be able to go down to my local dealer and buy the game in question. This was apricularly annoying when you reviewed Epic last year – the game still hasn't appeared in the shops eight months after you reviewed it! Just glancing through the May issue, I notice that, even by your own admission, eight of the games are not out yet – perfect examples of which are Rage's *Striker* and *The Secret Of Monkey Island II: LeChuck's Revenge*. So come on guys,, why set our pulses racing so early only to find that the game isn't going to be ready for another few months?

Ian Durst, Glamorgan

Actually, Ian, you've managed to point out one of the things that CU is proud of: the fact that we get the news, reviews, stories, exclusives and brilliant new game cover demos first! Some magazines have a policy of reviewing games that are actually on the shelves when they go to press, but we decided a long time ago that no-one wants out-of-date reviews. By getting the reviews first, we can forewarn our readers about hot new products and help them budget their money more effectively. As regards *Epic*, the game was complete when we reviewed the game, but bug fixing took longer than expected and the game suffered some serious delays as a result. Overall, CU reviews games about a month before they appear in the shops.

GOT SOMETHING TO SAY? CU AMIGA is the country's fastest-growing magazine, and therefore the premier forum to air your views on anything connected with the Amiga scene. Your comments can make a difference so don't be indifferent, drop us a line today.

***df0:Megademo Ram:* Then you can copy the files from RAM back to another floppy. Alternatively you can use a file management system like *Diskmaster*, *SID* or *Directory Opus*. *SID* is probably the best option - it is shareware and comes with a host of configurable options. The latest version, *SID 2.0*, is just out – check out a good PD library.**

AMIGA vs PC REVISITED

After reading your 'Ultimate Amiga' article I thought I'd write. I want to upgrade to a PC. The one I have my eyes on is going to set me back about £1000. This doesn't seem much as my old A500 and monitor cost me £700 and, in comparison, the PC is far better value for money. For a start, this PC is 33Mhz instead of the 3Mhz processing speed of the Amiga. It also comes with VGA graphics card and the facility to include 32,000 colours in 800X600 mode. Now try and persuade me to stay with the Amiga.

E. Grey, Middlesex

What we actually said in our article was that the Amiga is based on 80's technology and not 70's like the PC. Amongst other things, we were trying to get across that the Amiga is a constantly metamorphosing machine which can be added to and upgraded as you wish. What you get in the initial box allows you to start straight away and build up a formidable power station of hardware which will – more often than not – better other formats in terms of quality and value for money. The PC requires a minimum outlay of roughly £1000 before it can come close to what a basic £350 A500 can produce. Granted, there are better upgrades and expansions to be added to the PC, but they come at incredible prices and usually require more than one purchase to achieve a single function. If you doubt the Amiga's worth in terms of professional results, we suggest you take a look at computer-orientated television programs like The Chart Show and Tomorrow's World, they could use the cream of the computer world for their programs and they have chosen the Amiga.

DISK DILEMMA

Congratulations for an informative and entertaining read – the new style is great, combining just the right amount of games and technical software. Anyway, onto the point of my letter. With such high prices charged for creative and technical software, my only choice where the Amiga is concerned, has been to buy games. Of course I was delighted to see a full £100 3D package on one of your coverdisks. However, although this may be good news at present, in the long term it could prove bad for all of us. Think about it... If someone was saving up to buy *Sculpt 4D Junior* only to find that it was being given away with the latest edition of CU Amiga, they would feel cheated and could be put off buying any more creative software. If a good music or art package was being given away, it could stop them buying *Deluxe Paint* or the like. This would obviously mean software companies would lose out and then, eventually, the consumer. A similar thing has happened to the games industry and I certainly wouldn't appreciate something like this happening again. What are your views? Finally, what's the best accelerator (with memory) for a 1Mb A500 and how much memory would it give?

Nathan White, W.Midlands

Firstly, when you receive an expensive utility or art package, such as *Sculpt 4D Junior*, just because you get it free with the magazine doesn't mean that it was dropped through our letter box for nothing. We actually spend a great deal of time and money tracking down such programs so that we can give them to our readers. Therefore, to suggest that we are depriving an element of the industry of money is not really true and in fact the opposite. In the case of most programs we usually pay more money for them than the licensing company would have earnt in a YEAR selling the product through commercial channels – we kid you not! Secondly, it's extremely unlikely that someone would buy the very same program the same week as we put it out, and even if they did what have they lost? They've still got the excellent product they were willing to pay for in the first place. Also, the point about dissuading other purchases because we have given away a product in the same mould is not very likely. As you should know by now each software package has its own advantages and disadvantages. If the manufacturers felt that, say, the owners of *DPaint 3* would not buy *The Disney Animation Studio* or that other people who had an art package would not look at theirs, they would not release them in the first place. Just because you bought *R-Type 2* it doesn't mean you'll never buy or look at another shoot 'em up! The best accelerator for your A500, presumably not a Plus, is the GVP HD530, due to be launched about now and costing around £400. It's expandable up to about 8 megabytes, is convenient, easy to use an incredibly fast.

PROBLEMS PROBLEMS

I have a few comments and queries which I would like to bring up as my wife has bought me a printer at long last. My first comment concerns the October 91 issue and the *Red Sector Demomaker* given away on the cover disk. In the instructions guide you said that the 'Save Bootintro' option of the demo maker didn't work, but instead seemed to hang the system. Having tried this option I found that it does work if you use a formatted disk that has also been 'installed', but doesn't work on a disk that has only been formatted.

Next, I have a query as to where I can find a printer driver for my Olivetti DM124. The manual says that it needs either the IBM Proprinter X24 or the Epson LQ 2550, but I've been through my disk collection and can't seem to find one for that specific make. I'd appreciate some help from anywhere. The printer also has DLL (down-line loading), whereby I can down load fonts to the printer. However, the manual doesn't make it clear how to do this. Does anyone have any ideas? That's more or less it other than to say I like the look of the new improved mag, but how about a larger feature on PD now and again, perhaps more on the utilities side, especially programming languages. Keep up the outstanding work.

John McFarlane, Edinburgh

Programming languages, although a worthwhile topic, are probably a bit too advanced for most readers, but we will have something along those lines in the near future. Now to address your problem:

There are three Epson drivers on the standard Amiga Workbench disk. The one you require is the Epson Q driver. This should work perfectly in graphic and text mode, presuming you've set your printer to Epson compatibility. If this driver doesn't work, then your printer is obviously not completely Epson compatible. If this is the case, there are several PD printer driver generators with which you can produce a fully compatible driver armed only with the original printer manual. The other printer drivers can be found in most PD libraries as well. As for DLL you'll need to write a small program to do this. Unfortunately, many printer manufacturers use different formats for the way the characters are stored. The procedure should be explained in your manual, if not you'll have to ring the manufactures themselves.

BOOKWORM

Since Christmas of last year, I have been the proud owner of an A500+. Although I have had many months and countless hours entertainment and enjoyment playing games and experimenting with *DPaint 3*, I am becoming more and more frustrated with my very limited knowledge of computing. I would like to expand this knowledge, but the various articles in the Amiga magazines available seem to be written for people with at least a basic understanding of what is going on. The manuals themselves, written by Commodore, give good descriptions of what the various software supplied can do, but not how to utilise it. Can you suggest a good book to instruct me in the art of computing?

Stephen Berg, Notts

It's funny that you found the A500's manual informative because we found them completely useless! You might as well be reading a guide to the family toaster for the amount of useful information they impart! On the other hand, Abacus provide a whole series of books for beginners to programmers that are expertly presented and full of descriptive inside info. They even come with examples of functions performed on disk. Check local bookstores or ring 021 706 1188. In the very near future, CU will be starting a 12-month series on Amiga computing for beginners, so miss it not!

BACKCHAT

A GAMER IN NEED

I have tried unsuccessfully for about a year to obtain a copy of *Gettysburg* by Arc. I have had two copies myself but both crashed after only three hours of play. Anyone out there with a copy they no longer need, please contact me on 0526 44035.

Ian Sim, Lincs

Well, you heard him!

WHO'S THE BEST?

Every time I walk into my newsagents I pick up all the current Amiga mags. There are people at my college who only buy their specific copies and tend to stay with one title, thus the inevitable arguments break out as to who reads the best magazine. You would think that a magazine running the heading 'Britain's Best Selling Computer Mag' could not be argued with, but it seems that nearly every magazine carries their own such heading. So tell me where does CU Amiga stand? Are you the best as I suspect?

Tony Gilbert, Cottingham.

This is a tricky one to answer. Far be it from us to harp on about how fantastic we are. Like most magazines we feel that we provide the best coverage for the market we have targeted. That is to say the all-round Amiga enthusiast. It's not necessarily the best selling magazine that provides the most informative and intelligent comment, as is proved by The Sun being Britain's biggestselling daily newspaper. However, we are officially Britain's fastest-growing magazine, which means that more people are discovering us and adopting us as their regular read than any other magazine in Britain. In the space of just one year we have more than doubled our circulation, which is escalating all the time. We like to think that the only reason the competition is still in business is because their readers haven't come round to reading CU Amiga yet, but they're getting there.

WHAT WORKS WITH WORKBENCH 2.0?

I upgraded my copy of *Workbench* to *Workbench 2.0*, and bought Kickstart 2.04 ROM and the new Workbench disk. With some applications software, I still can't use super high-res or super-productivity mode. Help!

Nicholas Frump, Sidnum

Unfortunately, it's not quite as simple as that. There's more to *Workbench 2.0* than just the ROM. A number of other custom chips were updated, including the Denise chip. Denise controls all of the Amiga display modes, so if you don't have this chip the new modes, such as super-hires and productivity mode, won't be available to you, even if your software supports them. Some electronics dealers are already selling these as upgrades, take a look through the ads in this issue.

SOUND ADVICE

You may call me stupid, but I keep reading about sampling. What is a sample and how can I sample records or other such material?

Simon Pern, Ascot

A sample is an analogue wave form (in this case a sound) which has been converted to a digital format by way of a series of electronic logic devices. Once in this format the sample can then be replayed for whatever purpose digitally. To make or grab your own you will need to buy a sampler and connect it to your computer and to an outside sound source.

CD FUTURE

So the A570 is finally set for release, is it? I expect we'll see it in the shops sometime next year then! At least, that'll be the case if Commodore play true to form and cock it all up. Having said that, though, I must admit to being impressed with your review/preview of the machine in the June issue of CU. It certainly looks a tasty piece of kit and I'll be first in line when it hits the shops – if the price isn't wildly over the top! I've heard rumours of a £300 pricepoint which seems fair. I was especially interested in the *Fred Fish* CD which seems to offer tremendous value for money, but which could well be the first nail in the coffin of Public Domain libraries. I mean, who's going to buy the *Fred Fish* collection on floppy when you can get the whole lot at a fraction of the price on one or two CDs?

As for the A600, why bother? It offers hardly anything new except for the smart card slot, and I doubt whether that facility will be used until there's a substantial user base, and I can't see that happening for a good couple of years. Still, it's a nice compact size and I was pleased to see the TV modulator tucked away inside the machine. It was an ugly cumbersome device which disconnected itself at the most awkward of times. Speaking of ugly devices, why didn't Commodore get rid of the power brick? Surely they could have found some way to incorporate the power source inside the machine? No?

Anyway, thanks for two very good reviews. Let's have more stuff on these two new machines.

Adrian Watkiss, Liverpool.

STAR TREKKING

Could you tell me if Electronic Arts have any plans to release their *Star Trek* game on the Amiga? As far as I know, it was released on the PC but nowhere else. Also, will EA be releasing any of their Megadrive games on the Amiga, such as *Ice Hockey* and the excellent *Desert Strike*?

Dominic Angelone, Belfast.

On ringing EA, I'm afraid to report that the Amiga version of *Star Trek* is now well and truly dead. According to EA, the game would span too many disks to make it playable and, as the number of hard drive users is still rather small, it wouldn't sell enough copies to warrant a hard drive-only release. As for the other two games you mentioned, good news! EA will definitely be converting both games and work has already begun on *Desert Strike* although release dates haven't been set as yet. Expect it sometime early next year.

CHAIN GANG

Having bought your mag for the last few years I have seen it change beyond all recognition – all for the good, I hasten to add. The Amiga is great for games, but it's much more than just a console with keyboard affair as you constantly reinforce each month.

Another indication of the machine's blossoming 'respectability' are the number of advertisements crammed into your mag. However, it does detract from the editorial at times. Is there any chance of putting all the ads in the back of the magazine? I'm sure this would help make the magazine a better read as well as creating an ad directory so readers could find out about particular wants in a flash rather than having to search through the mag for a particular advertisement.

You're not the worst at this. There are a couple of Amiga magazines that actually have more ads than editorial which I think is a complete rip-off. I buy a mag for a good read and not to be assaulted by an over abundance of ads.

Adie McTaggart, Inverness.

CU Amiga wouldn't exist without the revenue we generate from selling advertising space. We might sell 100,000 copies each month, but that alone doesn't pay the wages (or keep Dan in packets of Rolos and crisps – Dep Ed). Still, I must agree with you about magazines which cram in as many adverts as possible to the detriment of editorial content – CU has a policy of reserving at least 50% of its space for editorial reviews and features and magazines which don't offer this are, in our opinion, offering extremely poor value for money.

RU AN RPGer?

Don't overdo it! The over-the-top coverage you give to RPGs and Adventure-type games is a constant annoyance. Your last few issues have been too top heavy in reviewing these types of games. I'm very much an arcade fan and want to see more coin-op conversions covered in your pages. Any chance?

Dave Totle, Buttie.

It just goes to show that you can't satisfy all of the people all of the time. We only review the best software around. Unlike other magazines, we're a selective lot and turn our noses up at much of the software that's released. The fact of the matter is that the quality and quantity of RPG games has been rising considerably over the last few months and our coverage reflects this. In addition, coin-op conversions are decidedly thin on the ground as most companies are beginning to shy away from such projects for a variety of reasons. Still, each issue of CU contains more than its fair share of quality arcade games and just because they're not conversions doesn't mean they aren't any good.

MONEY FOR NOTHING?

There's been one thing that has always bothered me. If a development house is working on a game, do they get paid a set amount or are they paid, say, by the month? The reason I ask is because, if they are indeed paid a monthly sum, then certain development houses must be raking it in. Take DID, for example. *Epic* is more likely to describe the wait for the game rather than Ocean's 3D space blast. Do software publishers fine developers?

Alan Treen, Norwood

Initially, they are paid a lump sum and given a date for completion. If, however, they are late, some companies do fine their developers.

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Say kids, what time is it? Time to get some new samples if you're still using that one. Tony Horgan investigates the sample CD boom.

sound ch

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SAMPLE YOUR WARES

If your sampling sessions are anything like mine, you'll have lost count of the times you've picked your way through your record collection, in search of that elusive vocal, drum loop or catchy intro around which to build the next dancefloor anthem. With scruples fading fast, you submit to sampling your sacred classics, before admitting to yourself that the Beatles' 'Across The Universe' just doesn't work as a rave track.

You could always send off for PD sample disks, but it's odds-on that the drum loops will have half the last beat lopped off, or that the vocals will be the same old scratchy samples which grace countless demos. When you know just how good Amiga samples can sound, flicking through a disk of someone else's flaccid attempts can be extremely frustrating.

Enter the 'sample CD': not a jumble of second rate sounds from last year's chart, but a sample library from a professional record producer, digitally mastered on to an audio CD. With the better examples, it would be possible to write a complete hit record entirely from the sounds taken from such a CD. Whether you're after breakbeats or single drum sounds, vocals, sound effects or synth sounds, there's a wide variety of CDs to suit your needs. So which do you choose? Take a look through this lot and see what tickles your fancy. Incidentally, one of the better packages, Zero G's *Datafile One* is reviewed elsewhere in the issue, so don't forget to check that out. *Datafile* features a massive selection of samples taken from the library of one Ed Stratton – AKA Man Machine, and the guy responsible for Jack'n'Chill's 'The Jack That House Built' a few years back. And jolly good it is, too.

HIT SOUND VOLUME ONE:

Pure Gold AMG (Tel 0730 88383) Price:£35.00

Fancy something a bit different? Pure Gold boasts some 120 sounds taken from such synths as the Korg Wavestation, Roland D-70, Yamaha SY-77 and Ensoniq VFX.

A Jarre-esque demo piece heads the proceedings, written solely with samples from the CD.

All of the sounds are presented in categories such as atmospheres, modern pads, basses, impressions and so on. Take a look through the atmospheres, and you'll come across a variety of sweeping choirs, enhanced with various subtle tones and accents. A truckload of meaty basses are next. As with the rest of the sounds on the CD, the basses are multi-sampled up to six times each. This may well be necessary for a lot of the sounds, but do you really need more than a couple of multi-samples for a bass sound? Not in my opinion. I'd rather see the disk space used for more sounds.

eck

EXOTIC IMPRESSIONS

On to the impressions section, and you're given a variety of sounds somewhat similar to those within the atmosphere selection – but very usable all the same – drawing on sampled choirs once again for their backbone. Strings and brass include both standard and exotic examples. The synth guitar section throws up some interesting sounds, but it's a shame proper 'decays' are substituted for simulated feedback. A handful of 'hits' precede the modern pads section. And here you'll find some great sounds made up of strings, brass, bells and choirs all stacked on top of one another. A three-piece drum kit and an assortment of effects bring it all to a close.

There are some stunning sounds here, although you'll have to spend time looping and possibly multi-sampling before you can get the best out of them. Anyone into predominantly instrumental music will find plenty to get their teeth into and, although there's not as much material here as on some CDs, the quality never dips from the excellent opening sounds right to the end. Especially at its relatively low price, Pure Gold deserves attention from the more musically minded samplers among us.

HIT SOUND VOLUME TWO:

Old Gold AMG (Tel 0730 88388) Price:£35.00

The second *Hit Sound* CD follows a similar track to the first – this time with the emphasis on analogue synths. Before the synths get a look in, you get a chance to sample Roland's TR-606, 808 and 909 drum machines.

Analogue synths are renowned for their beefy bass sounds, so it's not surprising that basses are the first of the proper synth samples. Thicker than a Kingsize Mars Bar, they're guaranteed to give your tracks a solid bottom end. A healthy dose of zappy effects and powerful lead sounds fill the bulk of the disk, with added interest from a few vocoder waves (computerised 'aahs' and 'oohs'), and some curious 'Sample And Hold' sequences. In terms of variety and especially quality, this is an extremely good CD. It offers a powerful range of effects and samples, and is probably more 'contemporary' than most of the current software. If bleepy techno tracks are your thang – and you probably won't be faffing around with samples if it isn't! – you'd do well to give Old Gold a whirl. A better collection of pre-digital sounds would be very hard to find, and for me it has proved absolutely invaluable. Go out and find one – you won't regret it.

WALKABOUT MUSIC IFF SAMPLES

WALKABOUT MUSIC (072681 3807) Price:£2.50 per disk, £19.95 for 10, £49.95 for 25

Commercial IFF sample disks are quite a rarity, normally appearing as part of MIDI sequencer packages. My experience of these has left me unimpressed by their pseudo multi-samples and wimpy drum sounds. This collection of twenty-five disks shows how it should be done .

Each disk concentrates on a particular group of instruments, or the sounds of an area of the world. So, as well as the usual choice of strings, brass, drums and percussion, you also get disks dedicated to Africa, India, the Middle East and the Far East among others.

COPYRIGHT OR WRONG?

The whole sampling business is a bit of a dodgy area. When you snatch a sample from, say, C&C Music Factory's 'Things That Make You Go Hmmm', you are actually infringing that group's copyright. However, unless you intend to make money out of doing so (by releasing whatever you are working on commercially) then ordinarily the music companies turn a blind eye to it. If you think this is alarmist talk, take the case of The KLF. One of their album tracks featured large extracts taken from ABBA's 'Waterloo', and good old Benny, Agnetha and Co. weren't exactly chuffed to bits by this and duly had the record withdrawn from circulation. In addition, a PD house was recently raided when the Trading Standards Authority investigated reports of the company selling disks containing both samples and digitised images from popular TV programmes and films. As a result, a wide batch of Kylie, Aliens and Terminator disks were confiscated, although in this case it seems that the people raided got off relatively lightly. So, before you go plundering through your Dad's Alma Coogan tracks for that elusive whistling sample, just bear in mind that you may end up paying for it...

The conventional instrument samples are the best I've heard on the Amiga. Strings, brass, pianos and bells are all sampled at two or three octaves, with smooth loops where appropriate. The sample rate seems to be 16Khz, and all the sounds are nice and long. The sound quality is remarkable in many places, with noise kept extremely low, creeping in only on some of the very long reverb/decay tails. The guitars disk has a good selection of electric and acoustic samples. Sensibly, most of them are strummed chords rather than single notes. Some of the bass guitar samples are less impressive, but the abundance of good slaps and picks makes up for them.

POLENESIAN GUAVA FLUTES(!)

In their *World Music* disks, Walkabout Music must have one of the most comprehensive collections of international instruments ever compiled. Just when I thought I was hip and trendy for knowing what a Cuica is, along comes a whole dictionary of Djemes, Bansuris and Cymbaloms! Snareless drums crop up fairly often, and there's also a lot of tuned percussion. Those sexy panflutes put in a few appearances, along with Sitars and assorted other stringed instruments.

Best of all in my book, though, are the various rhythm loops scattered across the disks, which are really quite versatile. The African drum loops and Tibetan chants could easily find their way into spooky background music, thumping dance records or trendy TV themes. The one niggle I have with the collection is that almost all the samples have a section of silence at the start of the sound, and often extra blank space at the end, so they could really do with a bit of trimming to save memory and keep the timing tight. Other than that, though, I can't fault an extremely professional and very reasonably priced series of samples.

If you'd rather do the sampling yourself, you could take a look at Walkabout's sample tapes (£9.95 each on chrome tape, £11.95 on metal). *The Percussion Collection* covers the standard drum kit, with an excellent selection of high hats, as well as a range of Maracas, Cabasas and scratches. *The World Music Collection* offers and alternative source of goatskin drums an iguana-gut guitars. The sound quality is a little lower than you'd get from a CD, but then we haven't all got a CD player have we?

CONCLUSION

There's no doubting that there is a real need for this style of sample supply. Especially the sample CDs, as the clarity of each sample is unrivalled and features none of the hiss or crackle normally associated with pilfering effects and voices. OK, so you're not going to get anything totally original, but for the newcomer and would-be KLF merchant, these offer an exciting new avenue to explore. Zero G's idea of supplying such data on floppy is excellent, too, as work is saved for the user, and with more samples on the way a large library is ensured. Perhaps it's time to stop sitting in front of the radio with my microphone...

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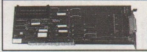

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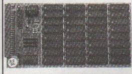

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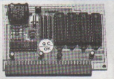

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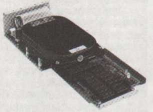

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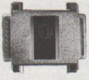

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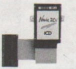

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TURN YOUR AMIGA INTO A SUPER-MACHINE

Get the most out of your Amiga and save a fortune, as CU AMIGA shows you the ways in which to turn your machine into a super computer. Our lead feature takes you on a step-by-step guided tour of your machine and lets you unleash its hidden potential. With easy to follow diagrams and photo-features, Nick Veitch is your guide as he shows you how to fit accelerator cards, build slow-motion game freezers, construct infrared joysticks, and piece together your own SCSI-board amongst other such things. Find out how in thirty days' time...

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CH...CH...CHANGES

Out with the old and in with the new! In our efforts to continually evolve and offer you the best Amiga magazine money can buy, we're revamping one of our sections. Which one it'll be, we're not saying, but we think you'll be impressed with the results.

GAMES GALORE

Premiere, *Zool*, *Crusaders Of The Dark Savant*, and *Guy Spy* (where have I heard that last one before?) are all set to receive their debut reviews as well as a feast of other top quality releases. Remember, if we don't review it, it isn't worth buying!

35 PAGES OF SERIOUS SOFTWARE ON TEST

Our Get Serious section expands and covers yet more useful utilities and programs to help you get the most out of your Amiga.

BUYER'S GUIDES

If you're thinking of buying a Hard Drive or a word processing program for your Amiga, then hold on until next month, as CU AMIGA will be taking an exhaustive look at the best that money can buy.

Contents may be subject to change without notice.

CU AMIGA – AUGUST ISSUE ON SALE 26TH JULY. MISS IT....NOT!

inside information

Rik Haynes takes a look at the newest fad to hit the computer – in-game advertising! Our resident Val Doonican fan also takes his regular trip down memory lane and takes a look at what was hot on the Amiga in years gone by.

A MESSAGE FROM OUR SPONSOR

Product placement is big business in the Motion Picture Industry and it looks likely that the trend is about to spread to the humble computer game. . .

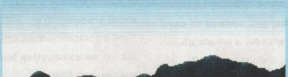
It seems you can't watch a blockbusting movie these days without a crafty little advert for a famous soft drinks producer, international airline, or fast-food chain sneaking into the camera pan, close-up or long shot. Taking the form of a quick glimpse of a logo or a slogan said by one of the main characters, these so-called product placements are all the rage in Hollywood. Now video and computer games are in the mainstream, it was only natural that somebody would transfer the concept over to the humble sprite.

Microtime Media is the company taking credit for the first move in this uncharted, but potentially lucrative, territory. Since the beginning of the recession, trendy marketing types at the London ad agencies have hit tough times. The huge expense accounts and company cars were the first to go. Only the people with creative ideas can still attract the big accounts and keep their jobs in the process. That's where good old product placement comes in. There's no way a viewer can ignore these adverts. Most of the time they don't even notice them. It's the subliminal aspect that really gives this form of advertising an edge over classic methods. Couch potatoes can't escape the message to eat more hamburgers or drive a fast car with their remote control if the advert is part of the background scenery. The same principle applies to entertainment software.

So, it could never happen on your Amiga, right? Wrong. It already has. Just take a look at the Penguin chocolate bars lurking inside *Robocod* (Millennium) or the 7-Up and Duckhams motor oil billboard ads in *Formula One Grand Prix* (Microprose). You can thank the guys at Microtime Media for these achievements. And this is only the start. Soccer games will probably be next in line. Ocean, known for its expertise in money-making marketing and licensing techniques, has full sponsorship from Quavers crisps for its new puzzle game, *Push Over*. This arcade puzzle game features snatches of animation and speech from Curly Colin, Quavers' cartoon hero in the hit TV advertising campaign. 'We feel product placement and sponsorship brings another dimension to Amiga games,' insists Danny Bobroff of Microtime Media. 'It adds quite a bit of value because you're actually taking part in an adventure with Colin.'

Smiths, the makers of Quavers, is keen to extend the awareness of Curly Colin among the target audience of the Ocean game – to make him more 'street-cred', if you will. Sponsorship obviously has fringe benefits, too. In the case of *Push Over*, cross-promotions and competitions will help to heighten the profile of Quavers, Ocean, and computer games in general. As an added incentive for buying a special packet of cheese or prawn cocktail flavour potato snacks, lucky punters could win a lovely brand new Amiga A600 to play the game itself. 'I hope sponsorship will bring down the cost of software and promote more advanced features,' mentions Bobroff. 'It's going to help publishers develop bigger and better games.'

Even the US Government has got in on the act with a warning against drugs beaming from every arcade video game across the country. With such an impact, it was inevitable that magazines like CU Amiga would also claim a slice of the pie. If you don't believe it, jump behind the wheel in *Jaguar XJ-220* (Core Design) and pay close attention to the roadside objects speeding past. As you blaze around the course, you'll notice various 'freebie' ads for some of the leading computer mags, including CU Amiga.



But that's not to say it's a completely rosy story. The whole idea of product placement has been slammed by worried parents and psychologists in the States. In particular, the Back To The Future trilogy of movies, starring Michael J Fox, were singled out for having too many deliberately-injected images of nice consumable items for gullible kiddies to buy. Perhaps the studios have become too greedy or the advertising executives have run out of fresh promotion ideas? What happens if the sponsor forces design constraints on the product? Sometimes it can happen unintentionally. Sega ran into trouble with one of its popular arcade car racing games when advertising hoardings for a leading cigarette company where added by the graphic designers on the grounds of realism. Some countries, the USA in particular, weren't impressed with this free endorsement being seen by thousands of children every time they went for a spin. It had to go.

Essentially, there's nothing wrong with product placement and sponsorship. It can add atmosphere and is relatively easy money for the publisher. The trouble is, it's got to fit in with the movie or video game. Overwise, it could just become a tiresome overused gimmick. In the case of *Robocod* and *Formula One Grand Prix* the in-game advertisements worked well as they actually seemed to be a legitimate part of the game, but if all games were to feature some form of advertising, I think the punter will very quickly become fed up with such blatant propaganda.

THE WAY WE WERE

THREE YEARS AGO

• Anita Sinclair of Magnetic Scrolls wasn't very happy with British Telecom. Why? Did she receive a large phone bill? No. Sinclair apparently felt Telecomsoft had mismanaged the launch of her latest adventure, *Fish*. As a result, the next release went to another publisher.

• One of the greatest examples of vapourware in this industry, *Mars Cops* from Arcana, did the rounds in specialist magazines. We're still waiting for this one…

• Dipping into the surreal in customary fashion, Activision unveiled *Wicked*. A classic tale of good versus evil, this strange game featured spores, portals, the constellation of Sagittarius and tarot cards. Despite this unusual and highly inventive mixture, *Wicked* wasn't a commercial success.

• Sega launched *Golden Axe* and *Crackdown* in the arcades and SNK was still enjoying fame and fortune with the aging *Ikari Warriors* concept.

• Remember Gilbert, the slobbering alien puppet from Get Fresh on ITV? To help publicise the game, Enigma Variations and Again Again sent a novel toy with each review copy. These small replicas of Gilbert could be thrown against a wall and would slowly ooze their way down to the bottom. Now that's entertainment!

TWO YEARS AGO

• CDTV arrived… almost! CU Amiga finally uncovered the truth behind rumours of a new 'Baby' from Commodore. Like many at the time, we were quite enthusiastic about this new age box of trickery.

• It was another bumper month for announcing big licensing deals. Titus went for the scary *Arachnophobia* from Steven Spielberg and Walt Disney while Mindscape picked up the rights to *Days Of Thunder* starring Tom Cruise and a fleet of superfast stock cars. In the meantime, Activision looked at the neat Aliens vs. Predator comic book from Dark Horse. The debate on which movie character is tougher continues to this day. Personally, I'd go for a Terminator every time.

• Chirpy Dan Slingsby travelled up to Derby to meet Core Design. Although this small company had developed the likes of Rick Dangerous for Microprose, many scorned the chances of them successfully going it alone. These critics were quickly squashed following the release of *Heimdall, Thunderhawk, Chuck Rock, Wolfchild, Corporation* and *Jaguar XJ-220.*

• News arrived of the latest Magnetic Scrolls game, courtesy of our exclusive preview of *Wonderland*. Based around the famous Lewis Carroll story, this production was a fine attempt to update the traditional text adventure. Virgin Games was the lucky publisher chosen by Anita Sinclair after her misadventures with Telecomsoft.

ONE YEAR AGO

• Forget the rest, CU Amiga was the first to look at the hottest license of the year. Not long after roving reporter Steve Merrett had seen an early version of Ocean's *Terminator 2*, programmer Kevin Bulmer suffered the loss of valuable equipment and work when his house was raided by cowardly thieves.

• Prompted by the huge sales of compact discs filled with remixed video game music in Japan, a British entrepreneur tried the same thing with some Amiga tunes from Psygnosis, Gremlin and Ocean. Sad.

• Trying to cope with the enormous crime wave in America, Samsung unleashed a small robot guard for the home.

• *Thai Boxing* from Anco and Addictive's *Football Manager* hit the rock-bottom price of £2.99, thanks to Prism Leisure.

THE SOFTWARE CHARTS

TOP TWENTY AMIGA GAMES—FULL-PRICE

1 JOHN MADDEN (EA)
The ultimate in American Football sims. Easy to play and utterly addictive, it'll be a long time before this is beaten. CU Amiga Screenstar, 88%

2 PROJECT X (Team 17)
The best blaster to hit the Amiga since *Xenon II*. With six massive levels awaiting your attentions, your trigger finger will be throbbing by the time you reach the end. Graphically exquisite, and a remarkable shoot 'em up. CU Amiga Screenstar, 92%

3 EYE OF THE BEHOLDER 2 (SSI/US Gold)
A worthy follow-up to the pioneering RPG. A larger quest and a wider variety of traps, puzzles and creatures await you this time. Adventurers have never had it so good, and this is the icing on the cake. CU Amiga Screenstar, 92%

4 SPACE CRUSADE (Gremlin)
Effectively *HeroQuest* in space, but the atmosphere generated by *Crusade*'s dimly-lit decks and corridors makes this the computer version of Ridley Scott's Alien. CU Amiga Screenstar, 92%

5 PARASOL STARS (Ocean)
The eagerly-awaited sequel to *Rainbow Islands* wasn't quite as good as the first game, but it still won us over. With the former's rainbows replaced by magic and death-dealing umbrellas, the action was every bit as hectic – not to mention playable. CU Amiga Superstar, 95%

6 BLACK CRYPT (EA)
Somewhere down in the crypt, something stirs - well, quite a few things, actually. EA's rival to the classic Dungeon Master expands on the ideas started in FTL's game and takes them further than anybody else. It may only feature one dungeon, but it's absolutely massive! CU Amiga Screenstar, 90%

7 GRAND PRIX (Microprose)
Geoff Crammond has been writing computer games since the good old BBC Micro was in its prime. Specialising in vectors, his games have got steadily better, and Grand Prix is quite simply the best thing he has done. Quite simply an essential game to own. CU Amiga Superstar, 95%

8 THE MANAGER (Software 2000/US Gold)
A new entry for US Gold's latest acquisition. Assuming the role of the eponymous Soccer Boss, the time-honored path of leading your team to glory awaits you. However, more than a few graphical thrills make this one of the better management sims. Not reviewed.

9 EASY AMOS (Europress)
A simplified version of the popular *AMOS* programming language, useful for the novice programmer. Sprites are easily created and manipulated, and it won't be long before the rudiments of program design are yours. CU Amiga Top Rated, 93%

10 HARLEQUIN (Gremlin)
Ignore the weird scenario, Gremlin's chequered hero is quite simply one of the most athletic characters a games player is ever likely to encounter. Includes twenty-three massive stages, each of which is home to all manner of weird nasties. CU Amiga Screenstar, 93%

11 SPECIAL FORCES (Microprose)
Microprose's band of mercenaries won no fans here. Its countless options were bravely trying to disguise an exceptionally tedious arcade game. Not reviewed.

12 A10 TANK KILLER (ENHANCED) (Dynamix)
Oops, not by Microprose as we mistakenly said last month, but a rather lame enhanced version of Dynamix's unimpressive Tank sim. The usual array of options try to mask a rather tedious sim. Not reviewed.

13 LEGEND (Mindscape)
From the creators of *Bloodwych* comes another foray into a dungeon-based world. Viewed from a *Cadaver*-style viewpoint, *Legend* offers a large play area and more spells than most would-be warlocks could shake a stick at. CU Amiga rated, 83%

14 A320 AIRBUS (Thalion)
Billed as the most realistic flight sim to date, Thalion's simulation is certainly one for all you who love wiggling their flaps and other such air-based japes. Using real-life maps and offering full control over the titular plane, this will appeal to anyone a little ticked off with dogfighting and bandits at three o'clock. CU Amiga rated, 81%

15 JOHN BARNES (Krisalis)
Nice as it would be to say that the boy Barnes did good, Krisalis's game offers very little over their previous *Man Utd* titles. Although a rather spiffy free kick system has been incorporated, it isn't enough to save this from obscurity. CU Amiga rated, 75%

16 COVERT ACTION (Microprose)
James Bond meets Microprose in this rather boring *Floor 13* variant. From learning such useful abilities as code cracking and general spying techniques, the door is left open for the player to become a regular little 007 through a series of complex missions. Not reviewed.

17 COVERGIRL POKER (Storm)
Fans of that pinnacle of journalism, The Daily Sport, can now get to grips with the models which adorn its tabloid pages. Girlies, such as Maria Whittaker, are all lined up in their digitised glory wearing a range of weird outfits and a smile. Actually, it has to be said that it plays a rather mean game! Not reviewed for obvious reasons.

18 POLICE QUEST 3 (Sierra)
Sierra's answer to Miami Vice returns for a third instalment. There's the usual smatterings of Sierra's oddball humour, but once again the game is struck by a rather obtrusive loading system. It's great if you own a hard disk, though. Not reviewed.

19 POPULOUS 2 (EA)
Bullfrog pulled out all the stops to make this long-awaited sequel something special. A brilliant extension of the original and a stunning game in its own right. CU Superstar, 95%

20 ULTIMA VI (Mindscape)
Lord British's sixth installment makes it to the Amiga and is every bit as good as its PC counterpart. You know what to expect by now, but that doesn't stop this series from getting steadily stronger. CU Superstar, 95%

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AREXX

PART 2

Following last month's general overview of ARexx, this month Alex Gian takes a look at the language's powerful parsing and tracing features...

PARSING AND TRACING

This month we are going to have a look at two of the most powerful ARexx features – its parsing (reading) and its tracing/debugging facilities – and show how you can get the best out of them. This is one of the language's most useful and – relatively – easy-to-use tools, and will provide invaluable as you start to learn structured coding. Also, we also have the second part of the instructions/functions panel which contains information on all the many commands, for those of you still without the full version of ARexx. Together with the listings we printed last month and next month's set, this will prove an invaluable reference guide for when you need such info quickly.

THREE STEPS...

We have already said that the orientation of ARexx is extremely practical. Three features, though, are particularly noteworthy:

- Very easy data handling
- Excellent program tracing and debugging facilities
- Dynamic memory allocation abilities, and good hooks into the system

The first two are the main subject of this article. The third is more advanced, and we will look at it another time as a comprehensive understanding of it is not essential for initial experimentation.

As we saw last issue, ARexx is very good at processing strings of characters. All ARexx data is handled as strings – even numbers – and converted internally. Strings can be built up easily and can contain complex or composite data. The data can appear as sequences of byte characters, or even sequences of 'words', separated by blanks inside sentence-like strings.

BREAKING DOWN

It is therefore quite important to be able to analyse strings and to break them down so that we can easily extract whatever data we need. This is the essence of parsing – the ability to read a data string meaningfully. There were brief examples of how to use the PARSE instruction for keyboard input, function arguments, and string splitting in the last issue; this time we will look at it a little more extensively.

ONLY (DE)BUGGING

The second good thing about ARexx that we will examine here is its tracing and debugging facility. One of the advantages of an interpreted language like ARexx is its interactive nature. Changes to a program can be made and tested very easily. Many interpreted languages have a tracing mode, where the line-by-line execution of the program can be monitored, and sometimes even controlled, by the user.

ARexx has a very rich variety of tracing options to use when debugging programs; these will not only help you to find errors quickly, but also give you a better understanding of how your program works. The tracing features are equally useful to beginners trying to find the inevitable errors, as well as to programmers who are managing large programs.

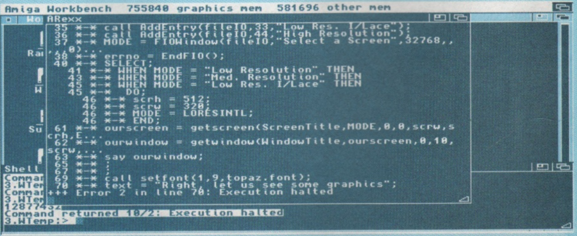
1 PARSING

Parsing in ARexx predictably enough is effected using the PARSE instruction; we will now look at how it works in detail. To recap, its general form is as follows:

PARSE [UPPER] <KEYWORD> [<String/Expression>] [WITH] <Target>

The <KEYWORD> determines the source of the string to be parsed:

- The keyword VAR indicates that we are going to parse a string that already exists as a variable.



```
 35 *-* call AddEntry(fileIO,33,"Low Res. I/Lace");
 36 *-* call AddEntry(fileIO,44,"High Resolution");
 37 *-* MODE = FIOWindow(fileIO,"Select a Screen",32768,,
,,0)...
 38 *-* errno = EndFIO();
 40 *-* SELECT;
   41 *-* WHEN MODE = "Low Resolution" THEN
   43 *-* WHEN MODE = "Med. Resolution" THEN
   45 *-* WHEN MODE = "Low Res. I/Lace" THEN
   45 *-*  DO;
     46 *-* scrh = 512;
     46 *-* scrw = 320;
     46 *-* MODE = LORESINTL;
     46 *-* END;
 61 *-* ourscreen = getscreen(ScreenTitle,MODE,0,0,scrw,s
crh,E...
 62 *-* ourwindow = getwindow(WindowTitle,ourscreen,0,10,
scrw,...
 63 *-* say ourwindow;
 65 *-* ;
 67 *-* ;
 69 *-* call setfont(1,9,topaz.font);
 70 *-* text = "Right, let us see some graphics";
+++ Error 2 in line 70: Execution halted
```

```
Commar
3.WTer
Commar
3.WTer
12877432
Command returned 10/2: Execution halted
3.WTemp:>
```

Shown here is an example of ARexx's tracing console performing a very basic line by line trace. Whilst it is doing so, a detailed interactive trace can be used to report on what is happening by using the TRACE?I option. Another example of ARexx's user-friendliness.

AREXX

- The keyword VALUE indicates that we are going to parse the result of an expression – but first we must evaluate it. The option WITH is necessary when using VALUE, in order to separate our expression from the <Target>.

In the above two cases, the string, variable or expression that we want to parse immediately follows the <KEYWORD>. In the next three cases, it is omitted, and the <KEYWORD> is immediately followed by the <Target>.

- The keyword PULL or EXTERNAL indicates that the user will be prompted to type in the string.
- The keyword ARG means that we are going to parse the arguments given to our program or function.
- Two further keywords, VERSION and NUMERIC, let us parse strings containing information about the system and the current decimal accuracy respectively. Another keyword, SOURCE, yields information about how the program was launched (as a function or command, etc.). These three are summarised in the section to the right.

OPTIONAL EXTRAS

The optional keyword UPPER converts all the results of the parsing to upper case. You may also remember that there are two abbreviated forms of the PARSE instruction: ARG <Target> is equivalent to PARSE UPPER ARG <Target>; and PULL <Target> is the same as PARSE UPPER PULL <Target>.

Now that we have seen how we can obtain the string to be parsed, let's look at the really important bit: how can we analyse it and extract the data we need?

The last part of our PARSE instruction, the <Target>, also known as the 'target template', contains the details of how to analyse the string. These details give us two important pieces of information:

- How to 'cut up' the source string
- The actual target variables themselves which are to hold the 'cut-up' sections

ARexx has three distinct ways of parsing strings:

A. PARSING WITH TOKENS

This method is useful when parsing sentence-like strings that are separated by blanks.

Tokens is simply a technical term for the 'words' in a string – for instance: 'a b c' has three tokens, and '1 2 3 4' has four. When we want to break down a string into its constituent tokens, we supply a target template consisting of a number of variables. As the string is read, each 'word' is passed into the successive given variable; any preceding or following blanks are lost. This process is known as 'tokenisation'. The last given variable receives the remainder of the string, which is not tokenised, i.e. it keeps its preceding blank.

If there are more variables than the number of tokens in the string, the excess variables will receive the so-called null string, "". One use for this is when the exact number of tokens in a string is known, for example when it is part of a table. By supplying an extra variable, we can 'force' all the 'words' to tokenise, as the last variable will receive the null string.

ARexx also supplies a special place-holder symbol, the full stop, which acts as a dummy variable. In other words, it forces tokenisation, but does not assign the token to any variable. For instance:

```
/*tokenisation with a place-holder */ car
= "Ford Cortina 2000 10000" parse var
car make model cc price .
```

The last line makes price '10000', instead of '10000', which it would have been without the place-holder. Of course, we could have just used a regular variable – ie: parse var car make model cc price x.

This would have had the same effect; but with the place-holder, no new variable is actually created. Place-holders aid the economy and appearance of a program.

B. PARSING USING PATTERN-MATCHING

This is useful when we know for sure that a certain fixed pattern (a symbol, for example) exists in a string. We can use it to separate the parts before and after the pattern. The patterns are specified in the target template between quotes; everything to the left of a pattern in the string is assigned to the variable that appears on the left of the pattern in the template, and so on. Consider the problem of getting the file name from a string with a full AmigaDOS path specification: 'df0:dir/myfile'. We know that everything before ':' will be the device or volume name, and everything after the last '/' will be the file name.

But what if there is more than one directory, i.e. more than one '/' symbol? We can keep parsing the string until we get to the filename. This sounds a little complex to say the least, but is actually very simple to effect, and can be done within a few lines. As shown in the next column.

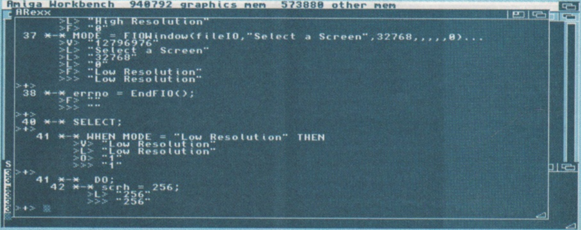
```
/* repeated parsing with a pattern */
filepath =
"dev:dir1/dir2/dir3/dir4/dir5/myfile"
do forever parse var filepath x "/"
filepath if filepath = "" then break end
say x
```

Another way to have tackled this problem would have been to find the precise position in the string of the last '/' using LASTPOS(), and reading everything after that. This brings us to the last method.

C. PARSING BY POSITION

It's possible to parse ARexx strings according to their character position. This can be relative to the beginning of the string, or to any other position specified in it. Parsing by position is in a sense the most straightforward, but can initially look quite confusing. Positions are specified in the target template by a number. If the number has no sign or is preceded by an = sign (3 or =3, for example) then it marks an absolute position in the string. If it is preceded by a plus or minus sign, it is a relative marker; the position it marks is calculated relative to the last specified position. The starting position is 1, in other words, the first character lies between positions 1 and 2. There is another special case: if the numeric positions are specified so a parse has to read backwards in a string, after which the result is merely read from the current position to the end of the string:

```
/* "backwards" parsing */
string = "string-em-up?"
parse var string a 5 b -3 c
parse var string d 5 e 2 f
say a b c ; say d e f
```



```
Amiga Workbench   940792 graphics mem   573880 other mem
ARexx
          >L> "High Resolution"
          >F> "0"
  37 *-* MODE = FIOWindow(fileIO,"Select a Screen",32768,,,,,0)...
          >V> "12796976"
          >L> "Select a Screen"
          >L> "32768"
          >L> "0"
          >F> "Low Resolution"
          >>> "Low Resolution"
>+>
  38 *-* errno = EndFIO();
          >F> ""
          >>> ""
>+>
  40 *-* SELECT;
>+>
    41 *-* WHEN MODE = "Low Resolution" THEN
            >V> "Low Resolution"
            >L> "Low Resolution"
            >O> "1"
            >>> "1"
>+>
    41 *-*  DO;
      42 *-* scrh = 256;
              >L> "256"
              >>> "256"
>+>
```

Both parses have the same effect. The target variables 'a' and 'd' are given the value 'stri'; now, since 'b' and 'e' attempt 'negative' reads, their resulting value is 'ng-em-up?'; 'c' and 'f' are then both read from position 2, resulting in 'tring-em-up?'.

So these are the three ways of parsing in ARexx. They can all be combined in a template, yielding very flexible parsing abilities. Here is a simple example to start you off:

```
/* combined methods of parsing */
string = "5 after #123456789"
parse var string number prep '#' x +5
say x
x has the value '12345'.
```

PARSING WITH THE VALUE KEYWORD

All our examples above use the PARSE VAR instructions, but the strings could just as well have come from the keyboard or as arguments to a program or function. Using the VALUE keyword enables us to have a target variable in our template that needs to be evaluated before it can be used. Taking advantage of this method, the strings themselves can contain information on how they are to be parsed! Looking at a variation of our example above:

```
/* parsing with VALUE */
string = "5 after #123456789"
parse value string with number prep '#' x
+number
say x
```

x again has the value '12345'. So '+number' has the value +5 in this expression. Note that the variable to be evaluated in the template must be preceded by a sign (+, -, or =).

MULTIPLE TEMPLATES

Finally, note that more than one template can be given to a PARSE instruction. This is done by separating the templates by commas. Using the VALUE keyword preserves the string to be parsed for the second and subsequent templates, even if it has been altered (by the previous template). E.g:

```
/*
string = "multiple templates"
parse value string with first string, again
say first string again
```

We see that even though 'string' has been altered, 'again' holds its original value. Multiple templates are also used when getting arguments from functions (as opposed to commands) since every argument has to be parsed separately.

As you can see, parsing is very extensive and flexible in ARexx. It is a vast subject, and we have only given a summary here. As always, the best way to learn about it is to experiment with it yourself.

2 TRACING

Tracing is controlled in ARexx via the TRACE instruction. When the trace is set, information about your current program state is printed out as it happens, along with your regular output. The way that the tracing occurs, and the level of detail displayed, are determined by the options set when TRACE is issued.

Like many other instructions in ARexx, TRACE accepts a number of keywords. Here is the general form:

TRACE [Optional Prefix]<KEYWORD>

The behaviour of the keyword following the TRACE instruction is slightly eccentric. Irrespective of whether it is supplied as a literal string or a variable, it will be converted to upper case (i.e. the name of a variable will be used, and not its value). The first letter will then be checked, to see if it matches any of the valid options, and if so, it is used. For this reason, these keywords are sometimes called alphabetic options. To make this clearer – TRACE INTERMEDIATES, TRACE INTER, TRACE I and even TRACE IPSWICH all have exactly the same effect. Here is a list of the most useful options:

- ALL – all the clauses are traced, and printed with their line numbers.
- RESULTS – all the clauses are traced, but the results of each clause are displayed, as well as its line number.
- INTERMEDIATES – here, not only is each clause, its line number and its result printed, but all the intermediate steps taken to reach the result are shown, too.
- COMMANDS – this traces commands issued to external hosts.
- ERRORS – this traces errors.
- SCAN – this is a dummy mode, that does not do a real trace, but scans the program as it would during a trace. In effect, it checks for syntax errors.

These keywords can also take one of the two optional prefixes: '?' and '!'. There must be no blank between the prefix and the keyword.

SUMMARY OF THE MAIN AREXX INSTRUCTIONS/FUNCTIONS

The following two instructions are covered in detail in this month's ARexx article, this text is intended as a reference guide which you may like to keep handy when programming.

PARSE

Further options. These are used to retrieve information from the system.

PARSE SOURCE: cf args nm res ext host
cf – takes the value COMMAND or FUNCTION depending on how program was called.
args – 0 or 1 depending on whether there were arguments.
nm – the name under which the program was called.
res – the full AmigaDOS name of the program.
ext – the file extension, e.g. ".rexx"
host – the initial host address

PARSE NUMERIC: dig fuzz form
dig – digits of decimal precision
fuzz – digits to ignore in numeric comparisons
form – engineering or scientific

PARSE VERSION: ARexx vers cpu mpu videomode freq
ARexx – "ARexx"
vers – current version
cpu – 680x0
mpu – if present
videomode – PAL or NTSC
freq – 50Hz or 60Hz

TRACE: alphabetic options
ALL – Trace all the program lines
COMMANDS – Traces commands issuded to external hosts
ERRORS – Traces commands that generate errors
INTERMEDIATES – The most detailed trace option available.
RESULTS – Shows the evaluated result of each line
SCAN – Tests the syntax of the program
? – Toggles the interactive mode
! – Toggles the external command inhibition
-nn – Skips (does not trace) nn lines of code

OTHER INSTRUCTIONS

ECHO: A synonym for SAY
DRP: 'Uninitialises' a variable that already has a value.
SHELL: A synonym for ADDRESS
PUSH: This instruction takes AmigaDOS launchable commands as arguments, and stacks them; when the ARexx script terminates, the commands are executed in the opposite order to that in which they occured.
QUEUE: Works similarly to PUSH except that the commands are queued rather than stacked. This means they are run on a first-in-first-out basis.

AREXX SUPPORT COMMANDS

These are run from the Shell or a script, and control certain global aspects of the ARexx resident process. They are found in the 'rexxc' drawer in Workbench 2.0
RX: Launches an ARexx program. Can also accept a short series of instruction clauses as the argument, if they are enclosed in quotes.
E.g. rx " aa=5 ; say aa"

RXLIB: Adds ARexx custom libraries to the system, so that their functions are recognised internally. Takes the library priority, a special offset (which should be in the library documentation), and the library version as arguments. The special library 'rexxsupport.library', supplied with ARexx is mounted with the entry - rxlib rexxsupport.library 0 -30 0.
TS: Starts a global trace on all ARexx programs currently running on the system.
TE: Ends the global trace started with TS.
TCO: Opens the special ARexx trace console. All trace output is redirected

These prefixes can also be used alone, without a keyword.

? – toggles the interactive mode on and off. In the interactive mode, after each trace line is printed, the program stops, and prompts you for any additional instructions, which it executes before continuing on to the next line. At this point, you can add code to your program, change the trace mode, or even exit – in fact, you can execute any valid ARexx instruction. If you wish simply to continue, you just press the RETURN key. This is a convenient way of viewing your code line by line, without having it scroll in your window faster than you can read it.

! – this toggles the command inhibition mode on and off. When we want to test a program that issues commands to an external host which can have potentially destructive results (deleting files, writing to sensitive memory locations, etc.), this mode displays all the commands that would have been sent out, but does not actually send them. The rest of the program executes normally.

In addition to these two prefixes, the keyword may also be preceded by a negative integer, which will be interpreted as the number of lines to skip before commencing the trace, for example: TRACE -10R .

It is even possible to supply the keyword as an expression to be evaluated, rather than as a literal string. This is done by using the VALUE option, i.e. TRACE VALUE x, which is not unlike the way it is used with PARSE. In this case the value of the variable x will be used. The TRACE mode can also be set with the TRACE() function, where the argument will be the relevant keyword. If no argument is given, then TRACE() will return the current trace mode.

THE TRACE

The trace output uses a series of symbols to identify clauses according to type. A list of these symbols is given below – even though they might look quite complex at first glance, they are actually very simple. You can see some examples in the accompanying ScreenShots, or just run a simple trace yourself.

nn *-* this indicates the line number nn

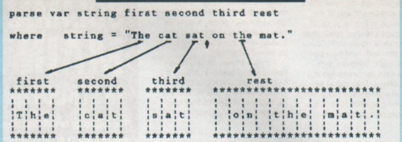
+++ a command or syntax error

>>> the result of a line

>+> the prompt for your own input, which appears only when tracing interactively

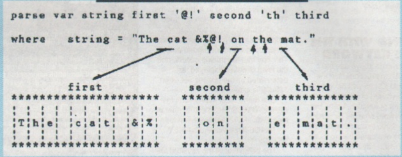
The following symbols only appear when a very detailed trace is given under the TRACE I option:

DIAGRAM 1 - PARSING WITH TOKENS



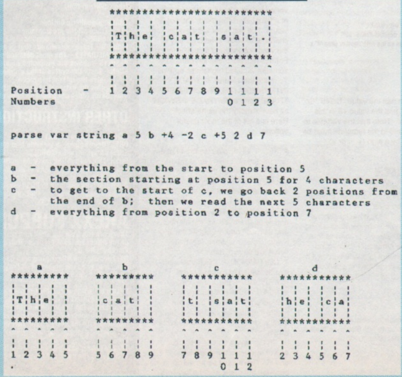
```
parse var string first second third rest

where   string = "The cat sat on the mat."
```

DIAGRAM 2 - PARSING WITH PATTERNS



```
parse var string first '@!' second 'th' third

where   string = "The cat &%@! on the mat."
```

DIAGRAM 3 - PARSING BY POSITION



```
parse var string a 5 b +4 -2 c +5 2 d 7

a  -  everything from the start to position 5
b  -  the section starting at position 5 for 4 characters
c  -  to get to the start of c, we go back 2 positions from
      the end of b;  then we read the next 5 characters
d  -  everything from position 2 to position 7
```

>V> the value of a variable
>F> the result of a function
>O> the result of an operation involving two terms
>P> the result of an operation on one term
>L> any name label
>C> the result of an expanded compound symbol
>U> a variable that has not yet been initialised
>.> a place-holder in a parse

IN THE WINDOW

The trace output normally appears at your original CLI/Shell window. It will be printed there together with your program output, so it may look messy with the result being that you can't make out either the output or the trace. However, it is possible to redirect all the tracing output to a window of its own, where it will not interfere with the normal program output. This window is known as the Trace Console, and can be opened from the CLI using one of the ARexx command utilities, TCO (a full list of the ARexx command utilities appears in the cut-and-keep section).

You can also redirect the output direct to a file or even to the printer using the standard AmigaDOS commands. You may not find this useful on a little ten-liner but wait until you are tracking the course of some giant database cross-referencing system or the like.

It is also possible to trace all the currently running ARexx scripts at once using the TS global tracing command. This is useful for testing interprocess communications between two Arexx macros controlling two different apllications.

Using the ARexx trace, you will not only be able to understand and debug your program better, but you will also get a quick insight into some of the features that are peculiar to ARexx, such as compound symbols and issuing of commands to external hosts.

Well, that's all there is to it – easy, eh! Happy tracing! – I think you will enjoy it....

NEXT MONTH

In the final part of this comprehensive three-part feature, Alex rounds off his guide of essential ARexx information and instructions by detailing more of the language's powerful capabilities. So, if you want to get in the know regarding what's what in ARexx, be sure to be here next month.

SUMMARY OF THE
MAIN AREXX
INSTRUCTIONS/FUNCTIONS

here. (See main section)
TCC: Closes the ARexx trace console.
RXSET <clip> <value>: sets the value of an Arexx clip. Is useful for creating clips available to all ARexx programs, from outside of ARexx!
HI: Halt Interrupt. Forces all ARexx programs running to terminate. Useful for breaking out of inadvertent infinite loops, etc (so it actually means 'bye').

WAITFORPORT: Used in scripts. Forces a wait for the appearance of an ARexx port (launched from elsewhere) before continuing. This is done as a safety measure.

FUNCTIONS

[] Square brackets indicate optional arguments.

FUNCTIONS OPERATING ON STRINGS

Many of the functions below take the following optional arguments:

'start' – a numeric argument to indicate the position where the operation is to start (default = 0). This argument is indicated as [s].

'length' – a numeric argument, where two strings are involved, to indicate how many positions(characters) of str2 apply (default = all the string). Indicated as [l].

'padding' – a character to fill excess spaces. Indicated [p].

ABBREV(str1,str2,[l]): Returns 1 if str1 is an abbreviation of str2, else returns 0.
CENTRE(str,len,[p]): Centres the given string in a string of length len. Can also be written as center().
COPIES(str,n): Returns a string consisting of n copies of str.
DELSTR(str,n,[l]): Deletes all the string from the nth character.
DELWORD(str,n,[l]): Deletes all the string from the nth word. [l] in this case refers to the number of words, and not characters.
INSERT(str1,str2,[l].[p]): Inserts str1 into str2
OVERLAY(str1,str2,[s],[l],[p]): Overlays the first string on to the second.
POS(str1,str2): returns the starting position of the first string in the second string, otherwise 0.
STRIP(str,<B or L or T>,[char]): Strips the leading or trailing blanks (or both) from the string, depending on the second argument. If 'char' is specified, then this is stripped instead of the blank.
SUBSTR(str,start,[l],[p]): Returns the substring of str from position start.
TRANSLATE(str,out,in,[p]): 'in' and 'out' and out represent a translation table. E.g. translate ('abcd', '23', 'bc') = 'a23d'.

ARITHMETIC

RANDOM(int1,int2,[seed]): Generates a random integer between the two specified integers.
RANDU([seed]): Generates a random number between 0 and 1 .
X2C(hex): converts hex representation into actual character. E.g. x2c(35) = "5"

SPECIAL FUNCTIONS

VALUE(str) :- Checks if the argument exists as a variable, and returns its value.
SYMBOL(xxx): Checks whether xxx is a valid ARexx symbol. If it is, the function returns 'VAR' in the case of an initialised variable otherwise 'LIT'. If xxx is not a valid symbol the function returns 'BAD'.
DATATYPE(xxx,[opt]): Returns 'NUM' if xxx is a number, otherwise 'CHAR'. If [opt] is specified, then xxx is tested against the valid options. If it matches the option specified, then 1 is returned, otherwise the function returns 0. These are the valid options:
ALPHANUMERIC – numbers and letters only
BINARY – a string of 1s and 0s
LOWERCASE – letters only, no capitals
MIXED – mixed upper and lowercase letters
NUMERIC – any valid number
SYMBOL – any valid symbol
UPPER – letters only, no lowercase
WHOLE – whole numbers only, no decimal
X – string of hex digits, i.e. 0 - F

SHOW(keyword,[object]): Returns the list specified by the keyword. If object is specified, the list is checked to see whether it contains that objhect, and the function returns 1 if it does, otherwise 0. The valid keywords are Clips, Files, Libraries and Ports. They may be abbreviated to one letter. The spelling of the object is case sensitive.

BITWISE OPERATIONS

ARexx also supports bitwise operations on strings. In this case, strings of characters are considered as the sequential binary representation of their ASCII codes. Hex strings in the 'ffff'x format are also considered as their binary representation. In other words, a bitwise operation on 'hd' (or '6864'x or '01101000 01100100'b), would act on the the string of bits 0110100001100100.

BITAND(str1,str2,[p]): Performs a logical AND on the bits. E.g bitand('1011'b,'0110') = '0010'b. [p] pads the shorter string to the right, otherwise the remainder of the first string is appended.
BITOR(str1,str2,[p]): Returns the result of the bitwise logical OR operation. E.g. bitor('1011'b,'0110'b) = '1111'b.
BITXOR(str1,str2,[p]): Returns the result of the bitwise logical XOR operation. E.g. bitxor('1011'b,'0110'b) = '1101'b.

BITSET(str,n): Sets the nth bit in the string to 1, where n=0 represents the rightmost bit.
BITCLR(str,n): Sets the nth bit to 0.
BITCHG(str,n): Toggles the nth bit in the string.
BITTST(str,n): Returns the state of the nth bit.
BITCOMP(str1,str2,[p]): Returns the nth bit where the strings differ, starting,as usual from 0. If the strings are identical, then -1 is retured.

under the bau

Continuing his monthly look at the Amiga comms scene, Dave Burns examines two boards and a superb terminal software package.

PART 3

ROAD TO NOWHERE

The M25 is probably one of the most congested motorways in the world. It's famous for its massive traffic jams, multiple car crashes and constant repair works. This might be a tenuous link, but in future years, it might also be famous (in comms circles at least) for being the home of Junction 9, one of the best up-and-coming Amiga boards around.

I'll be honest and admit that when I first looked at this board a few months ago, I refrained from giving it a review as I was unable to say anything constructive about it. Things have certainly changed for the better in recent months.

The system runs on an Amiga 2000 expanded with two hard drives, 6Mb of RAM, and seven extra serial ports using the Commodore a2232 multiple RS232 expansion card. This is networked with an Amiga 500 with 3Mb RAM and a 20Mb hard drive. There are two lines to the board, with another soon to be added in the very near future, making this one of the few multi-user Amiga boards. The modems are a Miracom dual standard HST giving speeds of 14400 bps (bits per second) and a SupraModem 2400 plus, one of the best mid-range modems available.

So what's on this board that makes it worth calling? To start with, as a multi-user, you will be able to chat live to whoever happens to be on-line at the time! There are on-line games to play against other users, including *Ansi warriors*, where you control a tribe of warriors; *Wanderer*, which is very similar to *Boulderdash* and involves collecting jewels whilst avoiding falling rocks; *Blackjack Casino*; *Contris;* and *Mafia Door* where you are a mafia boss building up your empire in the time-honoured way of using bribes (the people you bribe are, in fact, other players). Also, you can try the on-line IQ test! In addition there are countless files to download, and messaging areas which are linked via Fidonet to over 16000 boards worldwide.

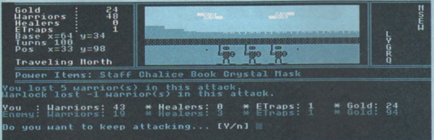
LOGGING ON

Logging on for the first time is a simple but important procedure which asks for your name, phone number, and details of your terminal software. It is very important that you answer all questions truthfully as they are influential in determining your access level. Access levels vary, to start with you have a visitors level, which will allow you to make use of most of the facilities of the board, including an unlimited download facility. As time goes on and you use the board more and more, your access level starts to rise. From a visiting user, you can actually rise to the status of assistant Sysop with the ability to not only access all areas of the board and perform maintenance tasks – such as moving or deleting messages and users – you will also have full access to the system's hard drives, enabling you to access the DOS commands of the host system. As you can imagine, though, this is a position of trust, so there are not many users that will attain this position. Visiting Sysops are automatically given high level access once their Sysop status has been verified.

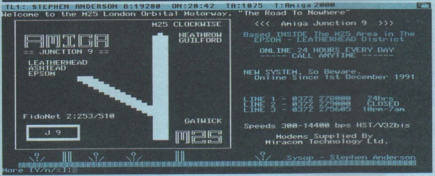
DEDICATION'S WHAT YOU NEED

The Sysop, Stephen Anderson, is a keen and dedicated chap who has spent the last few months off-line rebuilding the system as he was not satisfied with the original set-up. All his hard work has certainly paid off and it is now a well-presented and professionally-run board, although he makes no charges whatever for use or time on-line. New users often find the world of comms confusing, if not off-putting, and although the

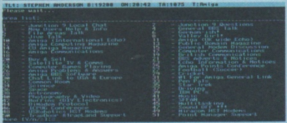
d walk



```
Gold        :  24
Warriors    :  48
Healers     :   0
ETraps      :   1
Base  x=64  y=34
Turns 100
Pos   x=33  y=98

Traveling North

Power Items: Staff Chalice Book Crystal Mask

You lost 5 warrior(s) in this attack.
Warlock lost -1 warrior(s) in this attack.

You  : Warriors: 43   * Healers: 0   * ETraps: 1   * Gold: 24
Enemy: Warriors: 19   * Healers: 3   * ETraps: 1   * Gold: 94

Do you want to keep attacking... [Y/n]
```



```
TL1: STEPHEN ANDERSON B:19200  ON:20:42  TA:1075  T:Amiga 2000
Welcome to the M25 London Orbital Motorway, "The Road To Nowhere"
                         M25 CLOCKWISE        <<<  Amiga Junction 9  >>>
                             HEATHROW
  AMIGA                      GUILFORD      Based INSIDE The M25 Area in The
  == JUNCTION 9 ==                           EPSOM - LEATHERHEAD District
   LEATHERHEAD
   ASHTEAD                                   ONLINE 24 HOURS EVERY DAY
   EPSOM                                     ----- CALL ANYTIME ------

                                           NEW SYSTEM, So Beware.
                                             Online Since 1st December 1991

                                           LINE 1 - 0372 278000   24hrs
                                           LINE 2 - 0372 279000   CLOSED
                                           LINE 3 - 0372 275605   10pm-7am
  FidoNet 2:253/510
                             GATWICK       Speeds 300-14400 bps HST/V32bis
     J 9                     M25
                                             Modems Supplied By
                                           Miracom Technology Ltd.

                                                Sysop - Stephen Anderson
More [Y/n/=]:
```



```
TL1: STEPHEN ANDERSON B:19200  ON:20:42  TA:1075  T:Amiga
Please wait...

Area list:
--------------------------------------------------------------------
1     - Junction 9 Local Chat              2     - Junction 9 Questions
3     - New Users Help & Info              4     - General BBS Talk
5     - File Areas Talk                    6     - German-ish*
7     - Jive Talk                          8     - Valley Girl*
10    - Amiga (International Echo)         11    - Amiga (UK wide Echo)
12    - Amiga Computing Magazine           13    - Public Domain Magazine
14    - CU Amiga Magazine                  15    - General Modem Discussion
16    - Amiga Communications               17    - Computer Communications
18    - -                                  19    - British Communications
20    - Buy & Sell                         21    - BBS Adverts & Notices
22    - Satellite TV & Comms               23    - Echo Information & Notices
24    - Computer Games Playing             25    - Amiga Points Conference
26    - Amiga Problems & Answers           27    - Football (Soccer)
28    - Amiga BBS Software                 29    - Cricket
30    - Chat Link to USA & Europe          31    - #1 For Amiga General Link
32    - Common Room                        33    - Pen Pals
34    - Science                            35    - Star Trek
36    - Space                              37    - Driving
38    - Astronomy                          39    - IBM PC's
40    - Photography & Video                41    - Music
42    - Boffins (DIY Electronics)          43    - SFFAN
44    - BiModem Protocol                   45    - Multitasking
46    - ICPUG Conference                   47    - Sound Off **
48    - USRobotics HST Modems              49    - Miracom HST Modems
50    - TrapDoor &TrapLand Support         51    - Point Manager Support
More [Y/n/=]:
```

Junction 9 is a very well-balanced board, offering an excellent variety of chat areas, mini magazines, and games. In addition, its 'Help' pages are especially good, and are effectively the board's equivalent to our Q&A pages. However, if there's a particular topic you want to see which isn't currently listed, this can be rectified if you want to organise one and put forward the necessary info to the Sysop.

menu screens are very clear there are often occasions when some assistance is needed. Stephen is more than happy to help, so if in doubt at any time, do not hesitate to use the Chat option which will put you in direct 'live' contact with him if he is available. If Stephen is not around, a message left will receive prompt attention. To log on to Amiga Junction 9 all you do is dial 0372 278000.

NEEDFUL THINGS

Another rather nice chap goes by the name of Andrew Pick. And, as a great fan of Stephen King, he has named his board after one of his fave books: Needful Things.

Currently available 24 hours a day, and seven days a week, Needful Things has everything that an Amiga comms user could wish for. It features a large number of files separated into categories such as graphics, music, archivers, demos and games with many more in support. There are also a wide variety of message areas covering much the same topics. Andrew's interest in all things weird also extends to the messaging areas, including UFOs, Ghosts, Paranormal and Magic.

New users are given almost full privileges so, from logging on you can download files to your heart's content. Once validated (generally within 24 hours) you have the ability to leave a Netmail message to any user anywhere in the world free of charge. Other features include 'Doors' to the Fred Fish Database, an on-line list of Bulletin boards, and a variety of games including *Blackjack*, *Hangman*, and *Contris*, an on-line version of *Tetris*. To get on-line to Needful Things set your terminal to dial 0495 245151.

SOFTWARE SELECTION

There are several terminal packages for the Amiga User, and you will find that the options available are often confusing with a lot of packages proving complex and option-intensive. Not so with *NCOMM* which has everything you are likely to need. Using the superior graphics abilities of the Amiga, Ansi graphics and sound are fully supported giving full colour to most boards' screens. All the popular file transfer protocols are supported, including XModem, YModem and ZModem plus Kermit and many others. There is also the option of using external protocols that are not found in most comms packages.

This package is considered by many to be the ultimate in comms packages and comes with full documentation covering all aspects of its use. *NCOMM* is not just a comms terminal program, though, as it also forms the basics of a bulletin board system. All documentation is in the form of Ascii files on the disk. *NCOMM* is a shareware package, so please send the registration fee to the address in the documentation. The author has worked hard to bring to the Amiga-owning community a well-presented and commercial quality package, it is only fair that he be rewarded for his efforts.

If you want to get your hands on a copy of this program, give any one of the many PD companies who advertise in CU Amiga a ring and ask them how much it'll cost. You should be able to pick it up for less than two pounds.

NEXT MONTH **Place a regular order with your newsagent or subscribe to CU Amiga now as next issue we will be starting a step-by-step guide to setting up your own BBS enabling you to enjoy all the benefits of comms without the phone charges. This will be followed by details on how you can link your board into the worldwide networks so that you can send and receive mail worldwide with just a short daily call to a local host. If you are into comms, you won't want to miss it.**

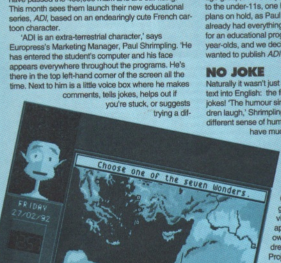
educational and entertaining

In this, the second in our continuing educational software articles, Mike Gerrard talks to Europress, one of the leading lights in education software, about their *Fun School* series and their forthcoming *ADI* release.

MEET ADI

Macclesfield-based Europress Software has shown there is a demand for good-quality educational software. Its *Fun School* series did the impossible and took educational programs to the top of the software charts. Sales of the series, now up to *Fun School 4*, have passed the 400,000 mark and are still rising. This month sees them launch their new educational series, *ADI*, based on an endearingly cute French cartoon character.

'ADI is an extra-terrestrial character,' says Europress's Marketing Manager, Paul Shrimpling. 'He has entered the student's computer and his face appears everywhere throughout the programs. He's there in the top left-hand corner of the screen all the time. Next to him is a little voice box where he makes comments, tells jokes, helps out if you're stuck, or suggests trying a different part of the program if you're having difficulty in one area.' *ADI* is the invention of a Paris-based software house, Coktel Vision, and the French version was shown to Europress at a computer show last year. Although Europress had already invested time in developing its own software to appeal to the over-11 age group, in the way that *Fun School* had appealed to the under-11s, one look at *ADI* made them put their plans on hold, as Paul Shrimpling explains: 'We felt it already had everything we'd decided was necessary for an educational program to appeal to the 11/14-year-olds, and we decided straight away that we wanted to publish *ADI* in the UK.'



ADI himself appears at the top left-hand corner of the screen to help you along with a series of quips and advice on the subjects you are learning.

NO JOKE

Naturally it wasn't just a case of translating the French text into English: the first casualties were the French jokes! 'The humour simply did not make British children laugh,' Shrimpling continues. 'It's a completely different sense of humour, so the programs wouldn't have much appeal if we simply translated the jokes. So we put in new jokes, and then got our educational specialists to start looking at the contents of the program, and how it fitted in with our own National Curriculum.' The Maths program, for example, had to be virtually rewritten, as the French approach is rather different to our own. 'They learn things our children don't touch on,' says the *ADI* Project Manager, Duane Lewis, 'and of course there are things our children need to be taught which aren't covered by the French system.'

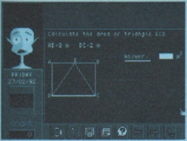
Europress has a panel of experts who they work closely with. These are mostly teachers, covering a range of subjects, and the panel is led by David Jones, a head teacher from Kent. Duane Lewis: 'When we've had the reports from our educational panel – and I've got a batch of their reports on my desk right now, for a future project – they're evaluated and the programmers are told what they need to do, and finally a prototype of the program will come back to me. That will be tested by me and someone else in the office, and by some testers outside, but before it's duplicated and published we take it out for further testing into local schools.'

The Cheadle Hulme High School is one of the schools used by Europress, and here, according to Duane Lewis, 'We have a great time. The children get really hyped up because they're out of their regular class and know they're going to get to use the computers for some new program, but they don't know what. I usually introduce the program to them, ask them to look for any bugs and so on, then we let them loose and afterwards ask them to fill in a questionnaire for about fifteen minutes, and then we talk about the programs and what they thought. We want to know if they liked it, what they liked about it, what they didn't, could it be improved and so on. The teachers are in on all this too, and we get valuable feedback from them.'

CONSTRUCTIVE CRITICISM

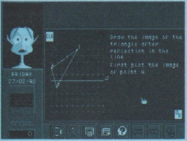
Comments from these sessions in schools are acted upon, before the final version of the program is ready for release. Naturally after all this effort Europress hope *ADI* might do as well as their *Fun School* series. But why did *Fun School* break the rules and become a best-seller? 'Two main reasons,' Paul Shrimpling thinks. 'One was certainly value for money. Every pack had at least six different games in it, with multi-levels in those games. The other factor, I believe, was that it was the first educational product that really appealed to both parents and children. In the past some educational software had not succeeded because it appealed to one or the other, but not both: it either appealed to the parents, who took it home and then found that the children said "boring", or the things that appealed to the children looked as if they were too much fun to be educational, so the parents didn't buy them. Now we know, of course, that it is possible to be both entertaining and educational.'

The programs weren't an immediate success. The first in the series was sold via mail order only, as retailers wouldn't stock it. Rows of unsold programs on their shelves told them that educational software

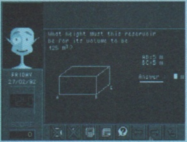


Calculate the area of triangle ECD

AB=9 m BC=2 m



Draw the image of the triangle after reflection in the line.
First plot the image of point A.



What height must this reservoir be for its volume to be 125 m³?

AB=5 m
BC=5 m

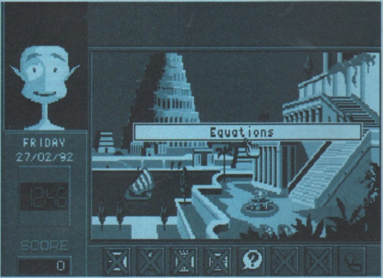
was not a big seller. It took a lot of persuading before Europress could get *Fun School 2* into the shops, and only because they allowed retailers to take it on a sale or return basis. If it didn't sell, the shops could return it and as a result had nothing to lose by taking a few copies. They rapidly sold rather more than they expected, though. 'I think everyone was surprised by the success of it,' admits Shrimpling, 'including the retailers... and us! We sold out in the December of its release because we didn't anticipate the sales levels. We sold roughly 30,000 units in December, and I reckon we could have sold 40,000 or 50,000 if we'd had them available.'

'*Fun School 3* was a natural progression,' he continues, 'although it does look a bit dated these days. Then we put the brakes on, and said "let's not over-do it." We decided we wouldn't do it again as we felt we'd covered the ground. What we did instead was contact several hundred registered *Fun School* users and asked them what they wanted from us by way of educational software. About 80% of them said they wanted more of the same, but with a bit of variety in the subjects covered, and for different age groups. We were still slightly reluctant to do it, but the demand seemed to be there so that's why we did *Fun School 4* and included new topics like geography, history, more general knowledge, and it did very well.'

THE FUTURE

The *Fun School* programs were all aimed at the under-11s, and Europress decided that it ought to use what it had learned from their success to publish something for the over-11s. They therefore decided to set about designing some educational software for that age group, and were quite well on the way... till that meeting with Coktel Vision. And, if *ADI* does as well here as any of the *Fun School* programs, there will be much celebration in Macclesfield this year.

The first programs to come out, at the end of June, will be the Maths and English versions of *ADI* for 11/12-year-olds and for 12/13-year-olds. In the autumn, the same subjects will be available for 13/14-year-olds and 14/15-year-olds, and at the same time the French program for all age groups will be released, all at £25.99.



With the popular *Fun School* series, Europress have made an excellent job of combining learning with fun. This is reflected in both the style and appearance of their software. The *ADI* packages continue this welcome trend, by capturing the user's imagination with bright, attractive screens and keeping their attention by making the learning process fun. It's a simple system, but they seem to be the only people doing so.

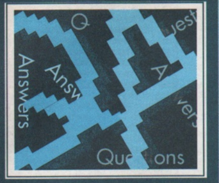
CDTV OR NOT CDTV?

There's no doubt that in the future CDs are going to be one of the main means of storing data. Where other companies quibble over standards and produce nothing but announcements, Commodore is to be congratulated for getting in there and producing a machine, the Commodore Amiga CDTV. By making it widely available and establishing a user base, this ensures that software development will follow. So far the software I have seen has by and large been impressive for its scale, without actually being mind-blowing in its content. I've no doubt at all, though, that future products which emerge will cause minds to be blown all over the country – listen out for it, it's a sort of quiet 'wow!' sound.

The noise is first likely to be heard in schools, as educational establishments are already getting in on the act, with Commodore's active encouragement. One such is Blairgowrie High School on Tayside, which was the first school in the area to use a CDTV on a trial basis, thanks to a local initiative aimed at encouraging the use of Information Technology throughout the curriculum and indeed throughout Tayside.

The initiative was organised by the Tayside IT Co-Ordinator, Keith Thomson, who said that 'Teachers found the audio sections of the Amiga CDTV titles excellent, and they motivated the pupils enormously. The titles provided an easy-to-use source of varied information.' Those titles included the increasingly-popular *Learn French With Asterix*, *Japan World*, and the *World Vista Atlas*. The Langlands Primary School in Forfar is also using the last two titles as part of a project on Japan.

***Japan World* – the first educational program specifically produced for the CDTV – has already been given a good going-over in Derbyshire, whose schoolchildren were among the first in the country to use it. That's because it was partly developed by Derbyshire County Council after the Japanese company, Toyota, chose to build a £700 million car assembly plant there. It's a sensible means of helping children understand – in a fun way – a very different culture from our own. The success of programs like this is confirmed by a simple remark from Keith Thomson, who reported after the Tayside trials that 'Teachers have now requested machines on a permanent basis.' CDTV or not CDTV? That isn't the question!**



Welcome to CU's curiosity shop, where Mat Broomfield will attempt to bring clarity to a strange assortment of quirks and queries.

HI-RES HICCUP

I recently bought *DPaint IV*, and enjoy all of the exciting features it incorporates. One thing that I noticed when using *DPaint II* which also occurs with *DPaint IV*, is that, if I choose any screen mode except lo-res, the screen flickers and the writing gets smaller. This becomes worse with the higher resolution modes and, in hi-res, half the tools disappear and the writing is illegible.

Initially, I thought it was because I am using an unexpanded machine, but having upgraded to 3Mb in an attempt to solve the problem, I find that this is not the case. Can you please tell me why this happens as neither I, nor my friends have any idea and I really want to use hi-res as everything is smoother. I'm using my Amiga on a normal TV, could this be the reason, and would my problems be solved by buying a monitor?

Anthony Perkin, Bottisham, Cambridge

The computer screen is made up of tiny squares called pixels. A low-resolution screen is generally 320x256 pixels in size. When you change the screen resolution, you halve the size of the pixels along one axis – either horizontally or vertically – and both are shrunk in hi-res mode. Therefore, to fill a screen, twice as many pixels in that axis are required. Whilst this does indeed make your images smoother, due to a weakness in the Amiga's display hardware, the screen appears to flicker. This only happens in interlace mode and hi-res, and is particularly noticeable in areas of the screen which have sharply contrasting colours adjacent to each other (monochromatic images, for example).

Using a monitor will make everything easier to see – especially text – but the flicker will still be present. To solve this, you'll either need a flicker fixer board which can be purchased from your local computer shop or via a mail order company.

VALIDATOR VIRUS

I have several disks which appear to be infected with a strange virus. It won't allow me to write anything to the disks, and just gives me a 'Disk not Validated' message when I try to do so. I tried copying all my files except the validator over to another disk, but the virus appears again on the new disk. Can you please tell me which virus killer will deal with it, as I've already tried *Virus Killer 5.40* and *Virus X*, and neither of them can cope. Please enlighten me on what course of action to follow.

Abdulla Qassim, Dublin 2, Ireland

As you've already guessed, you're suffering from some form of validator virus, probably the Saddam or ROLE type. *Master Virus Killer 2.2* can certainly deal with these strains, and I suggest that you avoid solving the problem manually, as these viruses deliberately erase data from your disks if you try to tamper with them. You can buy *Master Virus Killer* from Amiganuts United, 169 Dale Valley Road, Hollybrook, Southampton, SO1 6QX.

If you suspect that your computer is infected, turn it off at the mains for a while and the virus will be eradicated, although it will remain on any disks that have become infected.

MEGABOARD MUSINGS

I have an A500 with an extra drive and printer, and was thinking of buying extra memory. I would like to know if it's safe to connect an Evesham Micros Megaboard to my existing half meg, bringing my total RAM up to 2Mb? I've heard that the Amiga's PSU (Power Supply Unit) can only cope with 1Mb and one extra drive.

Anthony Evans, Hamworthy, Poole

Most modern RAM expansions use special low voltage chips so that they won't place undue strain upon the Amiga's power supply, and this is true in the case of the Megaboard. The Megaboard is designed for users who already have a half meg expansion. The existing expansion plugs into the Megaboard, and the Megaboard then plugs into the RAM slot underneath the computer.

If you're worried about straining your PSU, you can buy a replacement which gives 30% more power from Power Computing, Unit 8, Railton Road, Woburn Road Industrial Estate, Kempston, Bedford, MK42 7PN. Tel 0234 843388.

FONTS FRACAS

I recently bought a Canon BJ-10ex bubble jet printer, and although I'm very pleased with it, I'm not impressed with my software's fonts output. These are output as Amiga bitmaps, with a subsequent loss of quality and a dramatic reduction in speed. I'm using *Penpal* supplemented by additional fonts.

Because of my preference for the printer's fonts, I naturally want to utilise them to the full, which brings me to my reason for writing. When setting up my printer, I did an 'All modes test', which prints examples of every print style. When I tried to use these modes from within *Penpal*, I had no success. I rang Canon technical support, and they suggested that the software is over-riding any settings I made to the printer. Is it possible to overcome this proble and, if so, is it possible to tell me what to do in layman's terms (ie. idiot proof), so even I can't cock it up?

John Stones, Frecheville, Sheffield

Most word processors override a printer's internal settings, although you can often counter this by resetting them after the document has begun printing. Start your document with a blank line, and as soon as the printer has 'printed' the empty line, take it off-line and configure it as required.

Using *Penpal*, you can use your printer's internal fonts by selecting 'Printer Fonts And Amiga Graphics' before printing, although, as you've already discovered, it takes no account of point sizes. Many word processors (but not *Penpal*, apparently), allow you to use embedded characters to take control of the printer's extra features. These take the form of escape or control codes followed by a sequence of characters and can be used to change the pitch, font style, etc.

A500+ POSERS

I've recently purchased an Amiga 500 Plus, and know absolutely nothing about it apart from the basics. Are there any SIMPLE music-making programs available? At present, there seem to be some restrictions on software for the A500 Plus. Will this affect me in the future?

Sean Conroy, Stonehouse, Gloucester

Two packages spring to mind. The first is called *Music Box* and is designed to teach the rudiments of music notation to kids. It only lets you play one note at a time, but is extremely straight forward to use. It's available from from Deja Vu, 7 Hollingbrook, Beech Hill, Wigan, WN6 7SG. Tel: 0942 495261. Alternatively, the *Deluxe Music Construction Set* is considerably more advanced, but still uses a traditional notation system (quavers, crotchets, etc), as opposed to the numbers and patterns system used by most modern packages. *DMCS* is available from Electronic Arts, 11-49 Station Road, Langley Business Centre, Langley, Berks, SL3 8YN. Tel: 0753 549442.

Most modern software is written to be compatible with the A500 Plus, as well as the older models. Consequently, you shouldn't encounter any problems with software written after December 1991.

ARCHIMEDES ANSWERED

I use an Archimedes regularly at school, so I hope this letter answers D. Ames' questions about transferring files to it from an Amiga (May '92 issue).

Firstly, save the program listing as an ASCII file on the Amiga and using, *Dos 2 Dos* or a similar program, transfer the file onto an MSDOS (PC) disk. Using the Archimedes' MSDOS reader (found on RISC user disk 3, or from most PD libraries), it's a simple process of copying the file from the MSDOS disk to an Archimedes one. The file will have been changed into a DATA file, so use the following RISC OS commands to revert it to ASCII: *SETTYPE <filename> <filetype> e.g. *SETTYPE PROGRAM FFF

The FFF is the filetype for an ASCII text file. A list of other filetypes can be found by typing *SHOW FILE$TYPE*

If the file you want to transfer is not ASCII (a sound sample or an IFF picture, for instance), don't change it into an ASCII file or the data will be destroyed.

Gary Ford Swadlincote, Derbyshire

WHICH AMIGA?

I'm thinking of buying an Amiga next Christmas, but I'm not too sure which one to get. Some games seem to require one and even 2Mb to run, so if I buy a 1Mb machine and upgrade to 2Mb, will it be compatible with all games?

I've heard that Commodore are launching a new Amiga 600. What does that mean in terms of the games that are out at the moment? Finally, what's the difference between Mb, a meg, and a megabyte?

Alex Main, Blacon, Chester

I've never heard of any games that require 2Mb to run, although some of them work more efficiently with more memory (reduced loading times, additional music, etc.). There are no compatibility problems caused by the addition of extra memory, but several games don't work quite as well with more than 1Mb.

The A600 is available now, and is essentially a cut-down A500 with an added game/memory card and hard drive connector. It's unlikely to affect the current games situation, but as it uses the new 2.0 kickstart and Workbench, it's going to suffer similar compatibility problems as the A500 Plus.

Mb, meg, and megabyte all mean the same thing. Mb is the technical abbreviation for megabyte (which literally means 1000 bytes, but in Amiga terms represents 1024 bytes). Meg is simply an abbreviation used when referring to memory and disk capacity.

FLASHER'S REVENGE

I'm writing to give my advice to Thomas O'Neill who reported problems with a flashing caps lock key in the February issue. I encountered the same problem, and spent weeks getting my Amiga 'fixed', all to no avail. Eventually, I tried exchanging power supplies with a friend – Voila! – my problem disappeared instantly. I must therefore conclude that the problems are due to nothing more than a faulty PSU, and would suggest that Thomas tries out a friend's unit before sending his computer for repair. If this solves the problem, I recommend that he buys a higher-powered PSU.

Manos Pappas, Chios, Greece

TUNE BIAS

Having bought quite a few issues of CU Amiga, I'm writing to find out why your 'Tune of the Month' winners always seem to be up tempo songs. Is it because readers only send in fast tunes, or is it because you pick fast tunes in favour of slow ones? It's quite possible to create nice relaxing tunes, as I have using *MED* and *Music X*.

How do you rate tunes, and are you biased towards the sort of tunes you put on your coverdisks?

Mike Coomber, Sittingbourne, Kent

The vast majority of entries are indeed up-tempo songs, with less than one in fifty opting for a more leisurely style. Every decent tune that has been submitted has won (three in ten months), so you can see the full extent of the problem! In fact, you may also have noticed that we appealed for more diversity in the entries, especially towards classical tunes, which shows that we are definitely not prejudiced towards the sort of stuff which usually wins.

Each month's entries are played one after the other, and the best entry for the month, wins – it's as simple as that. Additionally, if an entry from a previous month is better than anything in the current crop, then that will win instead. Tunes are assessed in terms of originality, use of instruments, complexity/subtlety and, most important of all, quality. I think the dearth of slow tunes is caused by the relative difficulty in creating tunes which stand up to scrutiny when you can hear every single tiny nuance, both in its composition, and the choice of instruments used.

FONT MAKING MYSTERY

I own *DPaint*, and I'm very interested in creating my own personalised fonts to use in pictures and slideshows. Despite reading the manual thoroughly, I can find no mention of such a feature. Does that mean that I'll have to buy an expensive piece of dedicated software or hardware. Can you point me in the right direction?

Could you also tell me how to include my own animations as part of a slideshow, in the same way as I do with pictures?

R.Gotlieb, Brookman's Park, Hertfordshire

Most versions of Workbench are supplied with a font editing and creation package called *FED*, which can be found in the Tools drawer, and will let you create your own fonts. It's not very user-friendly, so you may prefer a dedicated package, such as *The Calligrapher*. It's available from First Choice, Unit 8, Armley Park Court, Off Cecil Street, Armley, Leeds, LS12 2AE. Tel: 0532 637988.

As for your animations, provided they're stored in .anim format, there's a Public Domain utility called *PPAnim* which lets you play them from CLI. It's available from most PD houses.

BANNER MANIAC

I would like to produce banners, awards, signs, cards, and the like on my A500. I've been looking for programs, such as the IBM program *Bannermania*, but I've had no success. There only seems to be normal drawing programs such as *DPaint*. Are there any programs with ready-made graphics and fonts either available as PD or Licenceware, and if so, where can I get them from?

M.Manning, BFPO 39

I haven't heard of any PD/licenceware programs, but there are two excellent commercial packages that will help. The first of these is called *Print Studio*, and allows the creation of cards, banners, invitations, etc, using a variety of ready-made pictures, fonts, and borders. It's available via Electronic Arts and you can contact them at 11-49 Station Road, Langley Business Centre, Langley, Berks, SL3 8YN. Tel: 0753 549442. The second program is HB Marketing's *Award Maker* and is designed specifically for creating certificates, invitations and awards. It comes with a selection of hi-res borders and typefaces, as well as 200 predesigned awards. You can buy it from HB Marketing, Unit 3, Poyle 14, Newlands Road, Colnbrook, Slough, SL3 0DX. TEL: 0753 686000.

CONTROLLER CONTRETEMPS

I'm thinking about buying a GVP hard drive, but I understand that I need a hard drive controller. What does it do, and how much does it cost?

Duncan Strand, Lfe, Leicester

You don't need a controller if you're thinking of buying the GVP Series 2 or 040 drives as they come with one built-in, as do most Amiga hard drives. A controller is basically an interface which controls the flow of data between the drive and computer, and allows them to communicate with each other. They're primarily used when you want to attach a non-Amiga specific drive, and allow the user to access much higher capacity drives than are generally available to Amiga owners. Prices vary, so shop around.

UNION USER

I would like to set up a computer system to assist me in the administration of office work associated with 450 union members. Each member's full details would need to be on file, and I would require the ability to sort the members into a particular order, print address labels, mail merge to selected members, etc.

Notices play an important part in this work, so I would also require the facility to design and print them in full colour. I've been told that *Newsmaster* is very good in this area – is this true? I don't want an overly-sophisticated system as my knowledge is limited to what I have learned on a recent ten day course.

Can you also list the items of equipment that I would require, with specific recommendations, if appropriate?

R. Wood, Milton Regis, Kent

Although I suspect you've seen *Newsmaster* running on a PC, the Amiga has a range of desk-top publishing packages which are suitable for designing and printing high quality notices. Assuming that you don't even own a computer at the moment, here are my suggestions for a suitable Amiga-based system:

- **A500 with at least 1Mb of RAM**
- **Cumana disk drive**
- ***Penpal* (word processor with mail merge, and built-in database)**
- **Commodore 1084S monitor**
- **Canon BJ-10ex bubble jet printer (360x360 DPI=high resolution)**

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Optional extras are a 52 Mb GVP series 2 040 hard drive which offers a larger storage capacity, and much faster processing of DTP files. In addition, *Pro Page 3* is an excellent desk-top publishing package. If your database consists of more than a page of information per member, you may prefer to look at a package such as *InterBase* and *InterWord* which can handle higher volumes of text.

TURBO NUTTER AMIGA

I recently saw an advert for the ICD *Adspeed* chip which claimed to double the speed of the A500. When I phoned the company's technical department, they told me that it would only double the speed of spreadsheets. Could you advise me what I need to buy to make my Amiga as quick as the PC computers, especially for games such as *Formula One Grand Prix*?

What's the best choice in the price range?

S. Highfield, Willenhall, West Midlands.

There are two basic ways to speed up the Amiga: maths co-processors (co-pros) and accelerator cards (which may also include a co-processor chip).

Whilst an upgrade such as the *Adspeed* basically improves the speed of all maths operations in the computer, an accelerator will improve the speed of all CPU operations as well. Either way, the speed increase is limited by the speed of the Amiga's custom chips and drives. Number-intensive operations, such as ray-tracing, fractal rendering, and vector graphics, all benefit slightly from adding a faster maths chip, but to get the really impressive speed gains, you'll need a full-blown accelerator and these can cost thousands of pounds. You may find that *Formula One* will actually benefit by the use of the *Adspeed* board, but most games run at the same speed regardless of what acceleration or co-pros you use, as their speed is deliberately restricted when they're written.

ANIMATED MUSIC

I want to add sound and music to my *DPaint III* animations, but I don't know where to start. I've also heard that it's possible to connect a standard VCR to the Amiga. Is this true, and how cheap is it?

Jamie Cook, Benfleet, Essex

***Deluxe Video* from Electronic Arts lets you add SMUS soundtracks to *DPaint* animations, as does *The Director* from The Right Answers Group. *The Director* also lets you play samples, or activate music modules using your own player routines.**

The cheapest way is to load and start your music as a background task using one of the numerous module or sample players available from PD companies, then load and play your animation in the foreground using a PD package such as *Play Anim*, or *PPAnim*. Alternatively, you can hook an ordinary video recorder up to the Amiga using Newtek's *Digiview Gold, The Colour Solution* from Rombo and the *Datel Digitiser*. I prefer the *Colour Solution*. All these packages let you digitise images from a VCR or camera, ready for use (usually in HAM mode) on the Amiga. It's also possible to record Amiga stuff straight to video tape, using either the aerial leads and a modulator, or a monitor cable and the SCART input of your VCR.

WORKBENCH WONDERS

The area behind my Workbench screen has halved in size and flickers constantly. It's getting extremely annoying and, despite much messing about and tinkering, I can't rectify it. Please explain what's happened and how to cure it.

James Wilkinson, Warmington Peterborough

It sounds as if you've changed it into Interlace or hi-res mode. Go to the preferences and reset it to the default (medium res).

PC HARD DRIVE DILEMMA

Is it possible to use a PC hard drive on a 1Mb A500 as I've seen them on sale for as little as games in shops.

James Wilkinson, Warmington, Peterborough

You can use many PC hard drives on the Amiga provided the drives are 'raw' (without PC specific hardware/interfaces attached). However, you will need an appropriate controller, and these can prove tricky to find and may prove quite expensive.

A500 CLEANING

My A500 was second hand when I bought it, and has consequently built up a large amount of ingrained dust and muck on and in the keyboard. Can I remove this with a brush, or do I need special solvent?

David Streep, Manchester

You can certainly use an ordinary brush, although I doubt that it'll shift much. If your A500's guarantee has expired and you're not too ham-fisted, you can remove the top cover (by removing the screws from underneath), then take off each individual key cap. They're made of plastic, and should pop off if you pull them firmly. The larger keys (space, return, CTRL), are also attached by guide wire, so be very careful not to bend it.

Once a year, I remove all my machine's key and chuck them into a bowl containing washing up liquid and warm water, and it's never hurt them yet. Be extremely careful not to replace the keys if there is any water left on them, though, as they could damage your Amiga! CU can take no responsibility for keyboards or computers damaged by people attempting to follow these suggestions and getting Fairy Liquid in their machines!

KIND WORDS

I've just bought *Kind Words 2.0*, and whilst experimenting, I came across the 'Insert graphic' option. The manual says that this function will read IFF graphics from any file and insert it into the current document. As *Photon Paint 2.0* stores graphics in IFF format, in theory they should be compatible with *Kind Words*' import feature, but they don't seem to be so. When I tried to load a *Photon Paint* screen, all I received was the message 'Cannot read graphic format'.

J. Humphryes, Rampton, Cambs

***Photon Paint* only creates pictures in HAM mode. These pictures use all 4096 colours at once, but require a special display mode to handle them. As *Kind Words* almost certainly works in low or medium resolution with a maximum of 64 colours on-screen, the two formats are incompatible. If you created pictures in 32 colours or less (using *DPaint* or similar), I'm sure that they would load into *Kind Words*. If you have *DPaint IV*, you can load your existing HAM mode artwork, and convert them by changing the screen mode.**

NTSC/PAL CONFUSION

I'm going to buy an Amiga, and will be using a 50 Hz PAL TV as a monitor. I can easily acquire a 7.14 Mhz (60 Hz NTSC) Amiga from America where my brother lives, but I was wondering what difference there is between that and the 7.14 MHz (50 Hz PAL) version used in Europe? Are there any differences other than the RF Modulator and the power supply adaptor? In the USA, there is also an Amiga 500GT which runs at 14 MHz. Does this faster model accept all the same software as the standard 7.14 MHz variety? Is it better than the others and, if so, why?

I'm intending to use the computer for a range of applications including programming, graphics and word processing. Which computer do you suggest? What size of hard disk? How much memory and graphic resolution would be suitable?

M. Akmal, Riyadh, Saudi Arabia

As you plan to use the Amiga on a 50 Hz monitor, I suggest the PAL version, although I believe that most modern Amigas include hardware switching which allows you to toggle between PAL and NTSC displays. Having said that, the opportunity to use a 14 MHz Amiga is a big bonus as it will enhance the efficiency of most of the software packages you mentioned, and can almost certainly be switched off for compatibility with older software. The same effect could be achieved by using an accelerator, but this could prove to be much more expensive than buying it 'all in one'.

Whilst you're only just beginning in the world of Amiga, I would stick with a 52Mb hard disk and 2Mb of memory, perhaps buying one of the drives which combines the two. The graphic resolution is not an optional variable. The A500 Plus comes with at least six software selectable resolutions, and these are standard features of the machine. However, to use the higher resolutions fully, you'll need to buy a proper monitor.

ANY PROBLEMS?

If you have any questions of a remotely technical nature, we'll do our best to answer them. Send your letters to: Q&A, CU Amiga, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU.

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do it yourself sticky box

Mark Smiddy presents Sticky Box – a simple adapter to automatically switch between your mouse and joystick at the flick of a button...

MAGIC BOX

When was the last time you wanted to play a two-joystick game before discovering you had to fiddle around unplugging the mouse? It was during one of these moments that I came up with the idea for this design. Functionally speaking, it works more or less like the excellent RoboShift designed by Steve Collins, although his design has a few improvements over this one. Most notably it always defaults to the mouse port and the whole thing is built with ultra-compact SMT components.

However, the main advantage that our Sticky Box has over Roboshift is that it's seven quid cheaper. While Roboshift is only available commercially for about £17, this design can be bought for less than a tenner and is perfectly suitable for a first-time construction project. Even if you have never wielded a soldering iron in anger before, this project is simple enough for almost anyone.

Both designs can be built on the same PCB, but since extra saving is far outweighed by the extra convenience, a kit is only available for the more complex one.

CONSTRUCTION

Building the Sticky Box is a simple matter of 'stuffing' the PCB and wiring the flying 9-pin. Two points are worth noting: pin 1 of IC1 and IC2 (marked with a notch) face towards the D connectors. Also, take care when wiring the flying 9-pin D socket: the lead spacing is quite tight and you will need a small (typically 17 watt) soldering iron to do the job. A magnifying glass is helpful to read the pin numbers, too. A set of 'Helping Hands' available from Maplin or Tandy will come in very useful when performing this operation and building the boards.

HOW IT WORKS

Figure 1 shows the basic idea in action in both forms. A quad two-input multiplexer is available in a single chip 74LS157. Four control lines from each device are connected to the device and selected according to the state of the flip-flop. The flip-flop can be toggled into either of its two states by clicking either 'fire' button.

The multiplexer's four outputs exactly mirror the four selected inputs at any time this is passed directly to the computer and the operation is transparent (Actually, there's a slight delay of about nine thousand millionths of one second as a change of state passes through the gates). Also, being a logic device, it will not work with analogue devices.

IN REALITY...

So much for the theory, but in real terms all nine lines may be used so what about the other five? Well, two are for power (+5 and 0v respectively), these usually power the mouse but are used here to power the switcher too. The remaining three consist of mouse left and right buttons and one

DESIGN CONSIDERATIONS

The most important part of this design is that it should draw as little current as possible from the port which is, after all, only really intended for a mouse. The switch-based design will draw a little under 15mA and the logic version something around 25mA on average. This is achieved by using a combination of LS TTL logic and low current drain devices. IC2 in the main design could be replaced with a 74LS00 with a slight increase in drain. Also, the low-current LEDs can be replaced with standard 5mm versions by reducing the value of R1 to about 330R.

The current flowing through an LED is given by the following equation:

(Vs-Vf)/Rlim = If
Where:
Vf = Forward voltage drop.
Vs = Supply voltage.
Rlim = Value of the series limiting resistor in ohms.
If = Forward current flow through the LED in amps.

In the design this gives:
for the red LED:
= (5-1.7)/1500
= 2.2mA

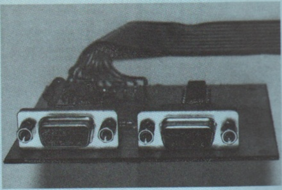
and for the green LED:
= (5-1.9)/1500
= 2.1mA

Thus the current flowing into the gate (sourced) is also just over 2mA which is well within tolerance for the 74LS00 and 74LS37. Using standard LEDs, a higher current is called for perhaps as much as 30mA and this requires use of the 74LS37's higher drive capability. In this case using a 330R series resistor gives, for the green 5mm type:

= (5 - 2.2)/330
= 8.5mA

which is a little too close for comfort for standard 74LS00; which has a rated current sourcing capability of just 8mA.

If you can get hold of the low current LEDs, the 74LS00 provides an even better, low-current solution: the cost is similar. Do not be tempted to replace the 74LS00 with a CMOS 4011 the pin outs are different and it is unlikely the CMOS logic will be capable of driving the TTL in the computer reliably if at all.



And here it is – the Sticky Box in all its glory. Never again will you have to pull your mouse out in a mad rush to get ready for that game of *Kick Off II*. It'll even ensure your ports last longer!

unused line.

The joystick firebutton is connected to the mouse left button. The right mouse button and unused lines are passed straight through; as is the firebutton in the simpler design (figure 2).

BUTTON IT

In the more comprehensive automatic version (figure 3) fire buttons are used to toggle the S-R flip-flop configured from two NAND gates. This part of the circuit is, perhaps, the most difficult to follow because it uses a lot of negative logic.

Opening the circuit are a pair of diodes which appear to be wired back to front. This is actually correct because pressing a mouse or joystick button connects the circuit to ground. The diodes are necessary to isolate the set and reset halves of the flip-flop.

NEARLY DONE...

This is another unusual feature of this design because you turn an input ON by switching it OFF.

Just to add complication, the secondary buffer gates invert the signal back again. However, the LEDs light when the driving gate goes LOW! In other words, LD1 is ON when the input to pin 1 of IC1 is ON; and LD2 is ON when the input to pin 1 of IC1 is on LOW.

It makes my brain itch, too. That information is provided mainly for those of you who want to know how the circuit works or fancy prodding around with a logic tester. Be warned, all is not necessarily what it seems!

NEXT MONTH

Our DIY section large month heads the mag as our lead feature next issue, where CU Amiga's Technical Guru, Nick Veitch, shows you how to get the best from your Amiga in virtually every area. It promises to be the most complete guide yet, so grab that soldering iron and get ready!

CHECK LIST

Here's a list of all the various bits you'll need in order to build your Sticky Box mouse/joystick switch

Parts List

IC1 – 74LS157

IC2 – 74LS00 or 74LS37 (see text)

D1 & 2 – 1N4148 switching diodes

LD1 – 5mm LED (10mA) Green (see text)

LD2 – 5mm LED (10mA) Red (see text)

R1 – 1K5 0.6W metal film 2% (see text)

PL1 & 2 – 9 pin D socket (PCB mounting)

PL3 – 9 pin D plug (in-line)

Cable – 1/2M either 9x7-core with screen OR 10-way ribbon

Veropins – 9 off

Sockets – 14-pin DIL x 1 16-pin DIL x 1
Case – to suit.

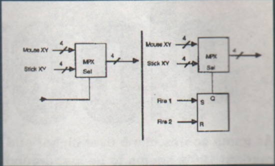
A full kit of parts (including double-sided PCB) or preassembled unit manufactured under licence from Designer Mouseware™ is available from:

Badger Boards, 87 Blackberry Lane, Four Oaks, Sutton Coldfield B74 4JF
Tel: 021 353 9326

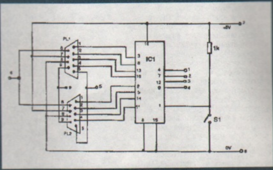
Kit: £6.85 + P&P
Complete: £9.95 + P&P. The PCB is also available separately. Please note that the kit is guaranteed to work. However, neither the manufacturers or CU Amiga can accept responsibility for errors made by the user while constructing it.

DOWN TO BASICS

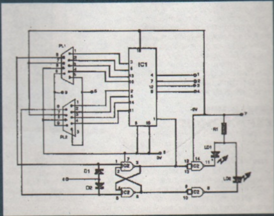
(AKA: A GUIDE OF WHAT TO EXPECT DURING THE PREPARATION!)



The basic operation reduced to a very simple block diagram. The four mouse or joystick outputs are switched on according to the level sent to the multiplexer by either an S-R flip-flop or simple switching.



This simplified version of the device does the job just as well, is cheaper and simpler to build (on Veroboard perhaps) but it lacks the convenience of the automatic unit.



The advanced switching system uses a second IC to handle the extra function of switching between the two devices simply by clicking a button. It's also used to drive the two LED indicators

scores on the doors

As game scores climb ever higher and the 'perfect' mark of 100% seems to be just around the corner, Dan Slingsby argues it's time for a reassessment.

ENOUGH'S ENOUGH

It's got to stop. Over the last two years, the average score for a computer game has gone through the roof. The vast majority of computer magazines seem intent on out-doing each other to see who can award the highest marks. And it's not hard to see why they're behaving so irresponsibly. As the recession bites, and ad revenue in the computer games market also dries up, there's no better way of attracting dwindling ad budgets than a good review.

Admittedly, the quality of games software has increased dramatically over this same period as developers take maximum advantage of the Amiga's architecture and its superior graphics and sound capabilities. But it's ridiculous to keep on handing out high marks like they were confetti. One magazine in particular has consistently overmarked (you'll know the mag I'm talking about if you read it!), awarding most games 90% plus. This isn't really being fair to Joe Public who buy magazines for good concise reviews to help them decide which games are worth forking out for. Overmarking also devalues the few games which really are worth their asking price. If a game such as *The Addams Family*, which in CU's view is a genuine platform classic, gets nearly the same mark as, say, Millennium's flawed *Sim City*-clone, *Global Effects*, then something is seriously wrong.

top score 100% - hold the front page, it's 120% !!
score
score
95
90%

PUBLISHER EXPECTATIONS

The result of all this overmarking is that, generally speaking, magazine marks have risen across the board. Publishers 'expect' a high score and if they don't get it, many are not averse to pulling ads, haranguing editors, or refusing to release software for future reviews. It all might sound exceedingly petty, but it goes on. Things have got so bad that one particular company recently forced us to pull a review just as the magazine went to press, threatening an injunction against CU Amiga if we didn't withdraw it. The crime we perpetrated was awarding the game a healthy 88% and a CU Screenstar. That just wasn't good enough for them, so rather than bump up the marks as I'm sure many other magazines would have done, the review was pulled. That's a shame, as the readers miss out on what was a good review of a good game, and the company concerned also miss out on some valuable publicity. As a result, we've now had to adopt a policy of not revealing a game's score prior to publication.

The temptation to continually revise marks upwards, especially when some souped up sequel or a more polished clone of an existing game appears, means that a 'perfect' score is only just around the corner. A good example of this must be Core's *Jaguar*, a good game in its own right which probably has the edge over Gremlin's fabled *Lotus 2* racing game. Because one mag had already given *Lotus* a thumping mark, they felt obliged to give *Jaguar* a whopping 98%. So what happens when *Lotus 3* or *Jaguar 2* comes along? Unfortunately, the magazine also puts each game into a League table which details the top twenty of a particular game genre. Now, this would be okay if it was used as a 'snapshot' – a momentary listing of the top games – but the League appears to be set in stone, and subsequent releases merely leapfrog over each other and push the marks ever upwards.

Technical innovation, originality and the time elapsed since a game's release all have to be taken into account. Many of *Jaguar*'s strengths stem directly from the success of Gremlin's original *Lotus* game. It's certainly a more polished racer, with lots of new twists and turns (if you'll excuse the pun), but it's far from original. A good year-and-a-half has passed since the release of the first *Lotus* game and in that time great strides have been made in the quality of Amiga games. To totally ignore this fact and just keep on handing out marks wildly is asking for trouble. CU reviewed *Jaguar* last issue and gave it 90%. That's four per-cent less than we gave *Lotus 2*, even though we rated it as the better game. Why was this? Because we felt that, although the game was far superior, it wasn't overly original – and that counts for a lot! Only by constantly redefining scores and comparing past and present releases can an adequate marking system evolve and a League table isn't the way forward.

WHAT CAN BE DONE?

So what can be done? For a start, I'd like to see more critical reviews by *experienced* reviewers (and not the YOP-scheme efforts of some magazines). I'd also like to see a wider differential between the marks awarded to the quality titles and the also-rans. Only then will the games industry be on a par with the likes of the music or literary press in their critical analysis and unbiased reviews. From this issue onwards, CU Amiga has redoubled its efforts to bring you the best and most accurate reviews of any Amiga magazine. We've always only reviewed the best software available, casting the dross aside, but we're going to be harder to please than ever.

Admittedly, we've overmarked games in the past, just as we've undervalued others. Nobody's perfect, but we like to think we get it right most of the time. If a game gets a Screenstar, you can be assured of its quality, and if a title is awarded a Superstar, then you should immediately pawn the Family silver and go out and buy a copy. It may sound pious and I may come across as someone out to have a pop at other mags, but this is a topic which needs addressing. By making this stand, CU Amiga is attempting to stop the trend, let's hope other magazines follow suit!

But enough of this one-sided rant. What do YOU think? Do you feel magazines give you the kind of reviews you need to make a purchasing decision? Have you ever bought a game on the strength of a reviewer's recommendation only to find it's a real turkey and a complete waste of money? Let me know what you think about the standard of reviews in both this mag and its many competitors, and we'll have a special letters section about it in a couple of months time.

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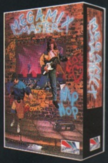
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DELETE-Erases the sample between pointers.

MIX-Mixes the contents of the cut buffer with the soundwave.

FLIP-Reverses the sample between pointers.

PLAY CUT-Replays the contents of the cut buffer.

EDIT MENU
CUT
COPY
PASTE
INSERT
SPLICE
CHOP
DELETE
MIX
FLIP
PLAY CUT

ECHO-Adds user definable echo between pointers.

IN-Makes Sample between pointers start quietly and build up to full volume.

OUT-Offers the opposite effect to IN.

PHASER-Adds phase shift to your sample.

LOUDER-Adds volume.

QUIETER-Decreases volume.

SEEK 0-Finds zero points nearest pointers, used in looping.

FILTER-Removes hiss or high frequency noise from your sample.

PACK-Removes every 2nd sample between pointers.

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FILTER
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STEREO ECHO-Adds digital delay between L & R speakers.

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SAVE IFF-Saves your sample between pointers as an IFF file.

LOAD SONG-Load a song sequence

SAVE SONG-Save a song sequence.

LOAD MIDI-Load a midi sequence.

SAVE MIDI-Save a midi sequence.

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